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LECTURES
ON
COMPARATIVE ANATOMY
AND
ANIMAL PHYSIOLOGY,

DELIVERED BY

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LECTURE XXV.

ON THE OSTEOLOGY OF RODENTIA AND MARSUPIALIA.

THERE is no *megatherium* nor *mastodon* among the *rodent* quadrupeds. Hares and rabbits, beavers and porcupines, agoutis and agouchis, pacas and marmots, hamsters and squirrels, rats and mice, are among the myriads that compose this gnawing pigmy race. As there is scarcely any form of organic matter which they cannot consume and digest, nor any climate which they cannot indure, they swarm in all continents, in all latitudes, in all altitudes, from the marmots at the verge of perpetual snow on the ice-clad mountains, to the rats that infest the dungeons of the valleys. With two chisel-shaped incisors above and two below (*Fig.* 101, *a f*), moved with force and velocity in a longitudinal direction, they file down the densest substances, and with broad flat-crowned molares (*Fig.* 102), rough as a millstone, they grind them to atoms, so that no form of organised bodies resists their gnawing influence. By converting vegetable into animal matter they moderate the luxuriance of vegetation, and advance the general march of organic development. Without canine teeth, or horns, or prehensile claws, their safety lies not in the exercise of offensive weapons or of muscular force, but in their watchful instincts, their gregarious, cautious habits, their quick motions, their filing, gnawing, digging, burrowing propensities. The easy prey to all the carnivorous vertebrata, from the lion to the serpent, their race is prolonged only by their immense fertility, by the quick succession and the myriads of their progeny.

Organised to consume the coarsest of vegetable food, the roots, the branches, the dry bark of trees, their alimentary canal is long and convoluted, their stomach capacious, and their *cæcum coli* generally of enormous size, succulated, and glandular. Their inferiority of organization is seen in the imperfect development of their cerebral hemispheres, and their want of convolutions; in the relative magnitude of their cerebellum, especially of the middle lobe,—the first developed, and the largest, as we descend in the vertebrated classes,—and in the division of their uterus, which in some is cleft throughout its whole extent as in oviparous vertebrata. We can trace this inferiority in most parts of their system, even in the gastric gland of the beaver, which is a remnant of the glandular stomach or *ventriculus succenturiatus* of birds; in the ventral situation of the testes, which is their position in all the inferior vertebrated classes; in the cloacal termination of their intestine; in the cleft form of their upper lip, and the deficiency of their masticating organs; in the relative size of their *corpora quadrigemina*, and the development of the *membrana nictitans*; in the feeble development of their muscular system, and in almost all the details of their skeleton. Without muscular force to bruise the solid stems and branches of trees between their molar teeth, like the huge elephants, they are doomed to spend their vital energies in reducing them to atoms by the incessant filing action of incisors, before they are prepared for the molar teeth. Thus their incisors have doomed them to a dwarfish size, and the little beaver before you is a giant of this order.

The largest rodent quadruped ever found in a fossil state, the *castor trogontherium*, found on the shores of the sea of Asoff, was only about a third larger than this animal. But we have seen to what a size the proboscidian pachyderma, those gigantic mice, have arrived, where incisors are dispensed with in the act of mastication. Inhabitants of holes and crevices in the olden times, as at present, the bones of rodentia abound in fissures, and osseous breccias, and diluvial caves, throughout Europe and the adjacent islands,—of species now extinct, and associated with feeble herbivorous quadrupeds, whose races, like their own, have begun and ended their short career.

The reduction of their hard vegetable food to minute particles, requires incisor teeth of great density and sharpness, and molar teeth composed of perpendicular laminæ of enamel and osseous substance (*Fig.* 102). The first clipping of the food to particles is effected by the dense enamelled exterior sharp edges of the two incisors in the upper jaw, and two similar chisel-shaped incisors in the lower jaw; which latter, by rapidly moving in a horizontal plane over the cutting edges of the upper, reduce to very small portions the dense and coarse vegetable substances upon which these quadrupeds subsist. They require no canine teeth; indeed, it must appear from this horizontal longitudinal movement of the lower jaw, that the presence of canine teeth of the ordinary character would be a great impediment to such movement of the jaw. There are no such teeth in rodent quadrupeds, but the incisors pass through the intermaxillaries to take root in the upper jaw-bones.

From this longitudinal motion in the lower jaw in the rodentia, backwards and forwards, you must necessarily expect that the condyle of the lower jaw, and the glenoid cavity of the temporal bone, will be directed longitudinally. In order to effect that longitudinal movement, the pterygoid muscles must be powerfully developed, and influence the form of the pterygoid processes and the whole sphenoid bone. The dense and rough molar teeth which are destined to grind down this coarse vegetable substance by a movement that is longitudinal, must have their crowns broad, rough, and flat, in order that they may meet, and rub and bruise the substances between them. They must have the layers of enamel directed transversely, in order that there may be constantly a rough filing surface of the one side to play upon the other; a structure, consequently, similar to that which we saw in the large proboscidian pachyderma.

This rapid and powerful action of the incisors against each other, and against the hard substances that are placed between them, wears them rapidly down, and they must therefore have the means of rapid renewal to correspond with this rapid wearing. They have large and long alveoli, extending far into the lower jaw, and, indeed, ascending up to the ramus, below the bases of all the molar teeth, and the same extent nearly is seen in the superior incisors.

The pulp therefore supplies here, by its great extent through this hollow tube, those very long incisor teeth of this beaver and other rodentia, and serves to deposit rapidly a large quantity of ossific matter in the interior of these teeth, so that although at its posterior part the incisor is a hollow thin shell, it is quickly consolidated by the interior deposition of matter, and by being pushed forward from the alveolus, it is thus rapidly renewed at its distal extremity, where it is most exposed to friction.

When the abrading cause is removed from an incisor, by removing one of the teeth from the jaw that is opposite, the incisor tooth continues to grow rapidly, as nature destined it should do, through life. It continues to shoot out from the jaw, and there is nothing now to abrade it. In course of time, therefore, it necessarily projects, like the canine tooth of a baby-russa, from the mouth. You perceive that it is necessary then for those rodent animals, in order that they may keep up the typical form and sharpness of their incisors, to have the means of filing down rapidly the extremities of these teeth.

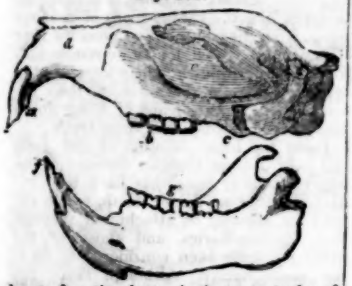
From the high situation of the pulp and base of these superior incisors in the upper maxillary bone, they have been regarded rather as canine teeth, which extend for security of attachment through the intermaxillaries, and those of the lower jaw have been considered to be of the same nature. Although there are only two of these incisors in action at once in the front of the mouth, you will observe in the upper jaw of these hares and rabbits that there is a very small pair behind those, which are ready for action, and there was an earlier pair of these incisors than either of those which remain, which were found by CUVIER to be regularly shed in the uterus. This first uterine pair of incisors is sometimes left after birth, and then we see no less than three pairs of incisors behind each other in the upper jaw of these rabbits, and probably all the rodentia shed their first incisors in the uterus, so that their jaws are early

prepared for the formation and rapid growth of these all-important instruments in the rodentia. The same uterine development and shedding are seen in their anterior molar teeth, especially where they are numerous in the adult, and subjected to much abrasion, and consequently require rapid growth and early development. The guinea-pig sheds its front pair of molar teeth, both above and below, while in the uterus.

When we put the rodent animals into places of confinement, and keep them from their natural gnawing habits, they are in misery, unless they have substances composing their inclosure that can be acted on by the teeth, to file them down. We find them thus delight in filing and tearing to pieces all the wood that surrounds them, therefore you see them frequently put into cages that are lined with tin. But during that confinement there is the deformity increasing from the want of abrasion of the teeth, their food generally being more soft and succulent in a state of confinement than in a state of nature.

But this rapid action and rapid growth, and consequently great size of the incisor teeth (*Fig.* 101, *a*), require that the bones that receive them be large, long, and capacious. This necessitates a great development in their intermaxillary bones (*Fig.* 101, *d*), as we saw also in the elephant, for the large incisors or tusks of the upper jaw.

Fig. 101.



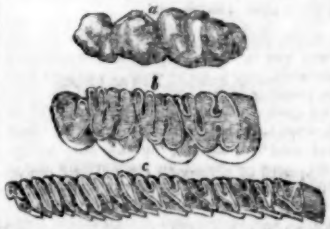
In order that those incisor teeth may be kept constantly fit for action with sharp transverse cutting edges, nature has provided them upon one surface only—the exterior or anterior—with an extremely dense, generally brown-coloured layer of enamel. The whole of the posterior part of the tooth is of the ordinary soft osseous substance, consequently the hard substances that are placed between those teeth, in rubbing equally upon the dense and upon the soft parts of the teeth, necessarily produce much effect upon the soft part, and wear it most rapidly down. The flinty layer of enamel which edges the teeth in front, suffers much less from this abrasion, and therefore presents at the free extremity a sharp and dense-cutting edge.

It is upon this principle of the unequal density and consequent abrasion of the enamel and osseous substances of the teeth, that we find the teeth of herbivorous quadrupeds, whether ruminantia or pachyderma, or other orders that feed on vegetable substances, constantly presenting a rough uneven surface, from the alternations of enamel and osseous substances which compose the broad crowns of their molares. But were the substances of these teeth to be worn down with equal rapidity, they would present at their worn extremities a smooth glistening surface, which might serve to bruise soft substances between them, but which would slide over them by every horizontal movement, and would not grind them down as a mill-stone.

Thus it is, then, that in herbivorous quadrupeds generally, the molar teeth must have a very different structure from those of carnivorous quadrupeds, where you observe no alternation of osseous substance and layers of enamel, but where the whole crowns are covered with continuous thick layers of very dense enamel, and are accuminated to a sharp cutting edge.

These molar teeth (*Fig.* 102) of the rodentia are often very rapidly worn down, from the density of the food and the constant filing action they are employed in.

Fig. 102



It is on this account that we observe the bases in some to be for a long time hollow below to permit of continued growth and increase. Where, however, the kind of food is of a softer nature, the molar teeth acquire more quickly their perfect form, and have their bases filled up with ossific matter. They are less abraded, require less constant renewal, and fangs are formed at their base to complete them and terminate their growth.

The order of which I am now speaking comprehends the mice, the rats, and similar small quadrupeds, some of which, you are well aware, feed not exclusively upon soft vegetable substances, but indiscriminately upon animal and vegetable matter. In such animals, therefore, it is, as you see in the rat (*Fig.* 102, *a*), that you find the molar teeth not only to acquire fangs and become perfectly incapable of further increase from any addition beneath, but the enamel even passes continuously over the tubercles, and the crown remains perfectly covered on its surface with a layer of enamel. All the teeth of rodent quadrupeds began with that covered form of the crown, and what you look upon now, when thus worn in the adult animal, is not at all its original appearance. When the tooth shot above the gum, there was no appearance of this alternation of osseous substance and enamel; the enamel covered over it as in the human teeth; but the rapid action soon filed down the thin superficial covering, brought the ends of the plates into view, and they have continued thus to remain. The principal force of the molar teeth in this order appears to be applied by the motion of the lower jaw forwards, and its pressure against the upper jaw in that advancing motion is effected chiefly by the temporal and masseter muscles. The pterygoid muscles are also very important in this longitudinal motion of the lower jaw, and hence the magnitude of the pterygoid processes (*Fig.* 101, *c*) of the sphenoid bone. It is on account of this force applied to the molar teeth in advancing the lower jaw, that the lower molares generally have their alveoli inclined a little forwards, and the superior molares are inclined backwards, as you see in this beaver (*Fig.* 101, *b*, *g*).

We have seen that the rats have the tuberculated crowns of their molares (*Fig.* 102, *a*) covered with a continuous thick layer of enamel, like an insectivorous quadruped, which accords with the mixed character of their food, and their almost carnivorous propensities. In most other rodentia the crowns of the molares are composed of alternate curved and convoluted plates of enamel inclosing the softer osseous part of the tooth; and there is a reason for every variety of curvature which these perpendicular plates of enamel present, although we can scarcely penetrate its cause.

Where the food of the species is of a softer nature, or comes much reduced and softened under the molar teeth, these have comparatively few plates of enamel in a given space of the crown; they inclose, consequently, a large proportion of osseous substance, and such molares are of a softer and more yielding character, as you see in the water rat, the guinea-pig, the gerbillus, the saccomys, the common hare, the kerodon. But there are many others in which greater force and greater density are required in the molar teeth, to complete the reduction of the food, and in these we find a much greater number of convoluted plates of enamel in a given space, as you see in the molares of the beaver (*Fig.* 102, *b*), and the meriones, and the capybara (*Fig.* 102, *c*), which corresponds with the increased density of the food. And the form of these molares is most intimately connected with the form and capacity of the alimentary canal, especially of the *cæcum coli*, the magnitude of which is generally in the direct ratio of this compactness of the plates of enamel or the general density of the molar teeth. Some of these molar teeth are still further consolidated, by the deposition around their exterior surface, and in the interstices between their convoluted plates, of a very dense connecting material, a *crusta petrosa*, as we see in the molares of the elephants. This is beautifully illustrated by the large elephant-like molares of the capybara of South America (*Fig.* 102, *c*). There can be no canine teeth in *rodentia* between the incisors and molares, because the space for the deep fangs of such canini is already occupied by the long curved incisors, which pass backwards even below all the molares, where the jaws are consequently more deep than in the front part of the mouth (*Fig.* 101, *b*, *g*), in order to deepen the alveoli of these molar teeth.

In the skull of the *rodentia* you will generally observe, that the parietes have a smooth, thin, and diaphonous appearance. On opening the skull, and looking at the surface of the brain, you perceive that it is destitute of convolutions, and, like a bird's hemisphere, entirely destitute of those inequalities of its surface. The cranium that covers them has consequently the same smooth, thin, even, bird-like form. This is a mark of inferiority in the cranium of rodentia derived from that of the contained soft parts. There are other indications of inferiority in the bones and hard parts of the head, as the great portions of the jaws, both above and below, that are entirely destitute of teeth,—that vacant space (*Fig.* 101) between the incisors and the first molar tooth, leading us gradually from the true edentulous quadrupeds to those that are better provided with these important instruments of mastication.

The tympanic and petrous elements of the temporal bone are often long in anchylosing to the squamous portion, in the

rodentia, and even remain detached from the squamous portion through the whole of life. You perceive in this adult beaver and in this guinea-pig, that the petrous element is anchylosed to the tympanic, but the squamous portion is quite separate from the other elements, as we commonly find it in cetacea, and we have already seen how generally the elements of the temporal bone remain detached through life in the inferior classes of vertebrated animals.

The mastoid process of the temporal forms a large bulla, as in carnivora, which enlarges the cavity of the tympanum. The meatus auditorius externus projects like a tube, and the zygomatic process of the temporal bone begins far forward, so that the condyle of the lower jaw has ample space in the longitudinal glenoid cavity to slide backwards and forwards freely. The orbit is continuous with the temporal fossa, and the deep zygomatic arch is extended with its convexity downwards, so that the masseter muscles act with great force on the lower jaw in its motions both forwards and backwards. The nasal bones are generally long and broad, and inclose large turbinated bones, and cover large convoluted plates of the ethmoid, for an extensive organ of smell. Their large eyes, like birds' eyes, and their large organs of smell and hearing, compensate, by their magnitude, for the imperfect development of their cerebral hemispheres. They have large palatine holes, as in birds.

As some of the rodentia reside on trees, where we see the active squirrels playing their gambols, others burrow in the earth, as the rabbits and marmots, and others have an aquatic life, as the beavers, the *hydromys*, the *myopotamus*, the *ondatra* we find a great variety in the forms of their skeleton, especially in the parts which are connected with progressive motion.

In their skeletons we observe two typical forms in the anterior extremities. In one great group, which employ, much the anterior extremities for prehensile purposes, whether in burrowing or climbing, as in their artificial constructions, the clavicles are strong, and reach in a solid form from the sternum to the scapula, as you observe in this beaver, in this rat, in this mouse, in this squirrel, and in several others of these small skeletons. But there are others in which the clavicle exists only in an imperfect rudimentary state, ossified solely in its middle, and reaching the scapula and the sternum only by its soft, cartilaginous terminations, as you perceive in the agouti, the paca, the agouchi, and other large American rodentia. From the smallness and little force of the head, the cervical vertebræ are generally long, and with short processes, to admit of extensive motion, and this is the case also with the lumbar vertebræ, as you see in the *chinchilla*, the *lagotis*, the *capromys*, and many other active species. The pelvis has a lengthened, slender, bird-like form, especially in the iliac bones, and the direction of the sacro-iliac articulation is often nearly in a line with the vertebral column in these light and nimble animals. The sacrum is thus lengthened, and consists of numerous anchylosed vertebræ.

For the most part, in the rodent quadrupeds, you will observe that the coccygeal vertebræ are extended considerably backwards. That forms an important organ in the beaver, both for carrying building materials, mud, and other soft substances, and in plastering the surface of the erections which it makes, to stop the currents of water, and thus form permanent pools in the rivers it frequents. It has the transverse processes of the coccygeal vertebræ of great length and breadth, and most of these processes are bifurcated at their extremity, to support the broad scaly tail, formed, in this animal, like a trowel.

You will observe that the anterior extremities of rodentia are generally smaller and more subdivided than the posterior extremities, possess greater mobility, have the component bones more completely ossified throughout, and detached from each other. The scapula in animals having very numerous uses of the arms, you would naturally expect to present a considerable surface, and to have its spinous process large, lengthened, and prominent. The humerus, especially in the digging species, has also its processes for the origins and insertions of the muscles well developed and prominent. The radius and the ulna not only are both fully developed, and separate from the one extremity to the other; but you observe that they admit of supination and pronation, and a considerable extent of motion between them. So that the hands in many of those animals are capable of being employed to hold their food and other substances, as well as to climb trees, and serve various other purposes. You see them often sitting on the tuberosities of the ischium, employing the anterior extremities, like quadrumana, for holding and turning their food, while it is rapidly filed down by the action of their sharp-pointed incisor teeth.

You will generally observe, that in the rodent quadrupeds, the posterior half of the trunk is larger and broader in its proportions than the anterior half, so that the posterior extremities are considerably longer than the anterior. They are organs which require strength to support and carry forward the trunk of the body, but

the anterior extremities require greater variety, extent, and velocity of motion, for all prehensile purposes, than the posterior. Where the hands are employed as organs of prehension, you would naturally expect that the phalanges would be more lengthened and slender than where they are employed as organs for digging, consequently you observe them lengthened in the climbing squirrels, shorter and stronger in the rabbit, the beaver, and some other digging and burrowing rodentia.

In the posterior extremities of most rodent quadrupeds, you will observe that the fibula is in a very different condition of development from the ulna in the anterior extremities. You see that both in the large and in the small skeletons of the rodentia before you; for the fibula is not only immoveably fixed below to the side of the tibia, but is frequently anchylosed at its lower part to that bone, so as to form of the fibula but a process of the tibia, preventing all motion between them, as you see in the beaver and many others, while the radius in the anterior extremities of the same species is detached from the ulna, and both these bones of the forearm are moved freely, the one upon the other.

The transverse processes of the coccygeal vertebræ you observe to be large in the skeleton of the beaver, to suit the form and the living uses of that organ; while in the tail of the squirrel, the lagotis, and many other climbing species, we observe only the long cylindrical bodies of the coccygeal vertebræ preserved through the greater part of the organ, shorn of all their surrounding processes. The one form, that of the beaver, is best adapted to afford surface for muscular attachments, and to give strength for the support of that scaly cartilaginous covering, flat, like a trowel, which covers the whole of the coccygeal bones, while, in the climbing rodentia, mobility is studied in this region, as a balance to the body, and no greater mobility could be admitted between vertebræ than where their isolated bodies, those long cylinders, meet and play thus freely upon each other by their rounded extremities, without lateral impediment from any lengthened processes, transverse or spinous. The hands and feet of the rodentia are very perfect; they have generally four toes before and five behind; the metacarpal and metatarsal bones and the phalanges are long and slender, and the ungual phalanges are generally provided with long and powerful claws. The perfection of these feet forms a striking contrast with those of the ruminantia and solidungula, alike organised to consume vegetable matter, and shows that the inferiority of organization is not manifested equally in all parts of the skeleton; it is chiefly manifested in the head of the rodentia, and in the feet of the ruminating quadrupeds. The inequality of the anterior and posterior extremities in this order is most remarkable in the *dipus* or gerboa, where it equals that of the kangaroos, and necessitates the same kind of leaping gait. We see this leaping movement by the great development of the posterior extremities, more or less, throughout this order of quadrupeds. The metatarsal bone of the gerboa is a single long and slender bone, like that of a bird, and has the same three pulley-like articular processes at its lower extremity, for the attachment of the three toes—a structure which we have seen to be common throughout the feathered tribes.

From the great natural family of rodent quadrupeds, where the skeleton presents many common characters of one typical form, we pass by insensible gradations to that most mixed order of *marsupial* quadrupeds, where there is no uniformity or typical form of the skeleton, excepting in what relates to the marsupial or supplementary bones of the pubis. In this group, founded on peculiarities of their generative and mammary systems, we find great varieties in the forms of the skeleton, and transitions to most other orders of quadrupeds, founded on more natural characters. In this order, marsupialia, which is characterised by many indications of inferiority, we observe a transition to the rodent quadrupeds in the masticating organs, and in the general skeleton of that burrowing species the wombat, and we perceive a like transition to the true carnivora, in the skeletons of those powerful and predaceous animals the *dasyuri* and the *thylacinus*. The general inferiority of these remarkable marsupial inhabitants of Australasia, is the divided oviparous form of their uterus, and the cleft form of their vagina, which generally correspond with a bifurcated form of the glans penis in the male; and the clitoris presents, of course, the same character in the female.

Their mammæ are placed in the *marsupium*, or pouch, on the exterior of the abdomen, for receiving and cherishing the imperfectly developed embryos which their abortive generation forces them to carry and to cherish, long after they have separated from the uterus. The high division of their aorta, and the magnitude of the femoral and epigastric arteries, send a larger flow of blood to the external organs of lactation, and rob the internal iliacs and the uterine arteries of the blood

necessary to perfect the development of the uterus for a complete mode of placental generation. But these peculiarities, which approach their genital system to that of monotrema and of birds and reptiles, have little influence on their kind of food, or their living habits, or the general structure of their skeleton. The most common and remarkable character of their skeleton, is that which you observe on the anterior margin of the pelvis. The pubic bones present on each side of the symphysis pubis two articular surfaces, to which are attached the arched bases of two moveable triangular bones of variable size, which taper forwards along the abdomen, and are placed behind the pouch and mammary glands, in connexion with the muscular parietes of the abdominal cavity.

In these bones, which we have seen in the monotrema and in reptiles, we perceive a further affinity with the inferior oviparous vertebrata, and they are useful here in aiding the expulsion of the very small embryo, in compressing the secretion of the mammary glands into the nipples, in protecting the internal viscera from the struggles of the young in the pouch, in giving support to the external parietes of the pouch.

In the *wombat* of New Holland and Van Diemen's Land, we have the dental formula of a rodent quadruped, with the heavy proportions of the skeleton and the burrowing habits of the capybara, the beaver, and many others of that order, but accompanied with the supplementary pubic bones, and a marsupial mode of generation, like almost every other indigenous quadruped of Australasia. It has two long, curved, chisel-shaped incisors above and below, which extend backwards behind the hollow roots of the molares, and have a dense layer of enamel coating their anterior convex surface. The cutting edges are directed obliquely, so that they cut chiefly by the lateral motion of the lower jaw. The molar teeth have a remarkably long and curved form, with the convexity directed outwards in the lower jaw, and inwards in the upper jaw; they have a double crescentic layer of enamel disposed only on their convex side, so that it covers the exterior surface in the lower molares and the interior surface in the superior molares. Unlike most rodent animals, the lower jaw is much broader than the upper, and the action of grinding is effected by the motion of the lower molares inwards, while pressing on the upper. There is no enamel on the concave side of these molar teeth. There can be no teeth here between the incisors and the molares, from the base of the incisors occupying entirely that space in the jaw, as in rodentia. The skull is peculiar in its very depressed form, flattened above and extended transversely. The orbits are continuous with the temporal fossæ, which are very wide, and the zygomatic process of the temporal bone presents, instead of a glenoid cavity, a convex transverse narrow ridge, over which plays freely the long, arched, transverse condyle of the lower jaw. The pelvis has the same broad depressed character as the head, and is placed in a line with the vertebral column. The iliac bones form a large curve directed laterally from the sacro-iliac articulation. The ossa ischii have their tuberosity of great size, and of a tri-curvate form, extended very much laterally. Each pubic bone presents two prominent convex articular surfaces for the two articular surfaces of each large marsupial bone; so that between each marsupial bone and the pubic on which it rests, there is a large open canal. The sacrum consists of five vertebræ, depressed and flattened in their form, and with the extremities of their transverse processes expanded and anchylosed, so as to form between them four heart-shaped canals. The scapula has the spine deep and long, and the acromion and coracoid processes of great size, especially the coracoid.

In the kangaroos (*Fig.* 103) we observe the posterior half of the skeleton to be

Fig. 103

largely developed in all its proportions compared with the anterior, thus agreeing with the general proportions of the rodent quadrupeds. It feeds on vegetable substances, and, like the rodent quadrupeds and many other marsupialia, it has two incisors only in the lower jaw, which are of a mucronate form and covered entirely with enamel. It has six incisor teeth above, but has no canine teeth in either jaw. The molar teeth, both of the upper and lower jaw, present broad tuberculated enamelled surfaces, for the pounding and bruising of the soft vegetable food on which this animal subsists. When they are fed upon very coarse vegetable substances, it has been observed that they have the power of bringing up a portion of that matter again from their capacious and complicated stomach, to be masticated in the mouth, as we see in ruminating

animals, and the condyle and glenoid cavity are flat, for lateral motion of the lower jaw, as in ruminantia; and there is here also a very long coronoid process (*Fig.* 103, *c*), extending for protection through the zygomatic arch.

From the use which the kangaroo makes of the arms, for various purposes relating to itself or its young, it requires to have extensive and varied motion at the head of the humerus, and that that extensive motion should be accompanied with security in the articulation. It is, therefore, provided with a clavicle, and the radius admits of free rotation in the forearm. It has this extensive motion in those small arms, for the necessary manipulations of the young while they are tender and rearing in the pouch, where the mammæ and nipples are placed. It uses the arms sometimes to hold branches of trees while it eats the leaves, or to remove sources of irritation from the surface of the body, reaching with ease, so as to touch and rub, all parts of the body with those arms, or to embrace forcibly its antagonist while it tears it with the large hind feet.

The coccygeal vertebræ of the kangaroo are remarkable for their magnitude and strength. So small are the anterior extremities, that the coccygeal region of this quadruped serves as a pillar of support for them in their ordinary leaping mode of progression; for you will observe them moving by successive bounds and leaps; throwing the whole trunk of the body backwards upon the hind feet and the tail; then by the simultaneous efforts of these members they throw themselves forward by bounds without once applying arms or hands to the ground. They have a long narrow longitudinal pelvis, in which the iliac bones extend forwards, free, and diverging along the sides of the lumbar vertebræ, and they are attached to the vertebral column only by a single narrow sacral vertebra, and a small part of a second. The marsupial bones, present in both sexes of marsupial quadrupeds, are here very small, and attached by a sharp convex edge to the narrow margin of the pubic bones. In the great size and length of their metatarsal bones, they remind us of the canon-bones of *ruminantia*, but there are here four of these bones in each foot, corresponding with the four very unequal toes. The two inner toes are developed throughout, but remarkably small, and united together by the integuments to the last phalanx. The outer toe, though larger than these, is very small, compared with the long and strong-hoofed middle toe, on which chiefly depend the progressive motion and the defence of the animal.

We approach the insectivorous and carnivorous tribes of this order, in passing through the kangaroo-rats with canine teeth developed in the upper jaw. The petaurus and the phalangista still preserve the two long spear-shaped incisors in the lower jaw, and the former has already canine teeth both above and below.

In this skeleton of the *flying* phalanger, *petaurus pygmæus*, the smallest of all the marsupial quadrupeds, brought, with most of these interesting marsupial skeletons now before you, from Van Diemen's Land by my intelligent friend Mr. Barnes, you observe almost all the details to agree with those of the larger long-tailed species. It has the same smooth, flat, depressed, broad form of the skull, the orbit continuous with a large wide zygomatic arch, the lower jaw compressed almost to a point in front, and with its angles arching inwards and backwards, beneath very largely dilated mastoid bones. The clavicles are complete; the long slender iliac bones are attached to only one sacral vertebra, and a small part of a second. The radius and the fibula are developed throughout. The broad-crowned molares, with elevated tubercles, of these *petauri*, lead us to the true insectivorous teeth of the *perameles*, and of the opossums of America, and of that web-footed aquatic species the *chironectes* of Guiana.

The bones of a marsupial insectivorous quadruped much resembling those of the opossums at present inhabiting America, were found in the old tertiary gypsum formation of the Paris basin, and jaws, erroneously ascribed to the same animal, have been found in a much older secondary rock, the Stonesfield oolite near Oxford. The portions found in the Paris gypsum (*Fig.* 104) presented all the more interesting and characteristic parts of the skele-

Fig. 104

ton, as the teeth, the upper and lower jaws, the vertebral column and ribs, the sacrum, the pelvis, and the marsupial bones (*Fig.* 104, *a a*), and some of the bones of the arms and legs, and showed that this remarkable tribe of quadrupeds, now confined to two remote points of the globe, have once been spread over the old world, and inhabited our own latitudes.

In these skeletons and skulls of the *dasyuri* and thylacinus, the most carnivorous of all the indigenous mammalia of New Holland and Van Diemen's Land, we perceive nearly the same characters in the teeth, in the deficiency of the orbits, in the elevation, strength, and magnitude, of the zygomatic arch, and in the general details of the skeleton which we find in the order *carnivora*, to which we next proceed. They all present eight incisors, however, in the upper jaw, while the carnivorous non-marsupial quadrupeds have only six. Their true molares are all tuberculated internally like the single carnivorous tooth in the upper jaw of feline animals. These are the pygmy lions and tigers of the vast and isolated continent of Australasia.

APPLICATION OF

MERCURY, LIQUOR AMMONIÆ ACETATIS, AND PYROLIGNEOUS ACID,

TO

VENEREAL AND GONORRHŒAL ULCERS AND WARTS.

To the Editor of THE LANCET.

SIR,—Dr. Wallace's clinical lecture on cases of venereal disease, published in your excellent Journal, February the 15th, induces me to make a few observations on the local treatment of venereal and gonorrhœal ulcers and warts. I am not at all surprised that the nitrate of silver heals a primary venereal ulcer sooner than the black wash, since the mercury necessarily undergoes a partial chemical decomposition when mixed with lime-water, and thus its normal effect upon the sore may be greatly diminished. Yet it does heal those sores. When I was officiating medical officer to the *Whitehaven Dispensary* in 1825, I repeatedly healed gonorrhœal and venereal ulcers by the local application of the *submur. hydr.* alone, and now beg to say that I consider this remedy to possess two advantages over the *n. argenti*; first, its application is unattended by pain; and, secondly, it absorbs any fluid matter present, and by this means prevents irritation in the surrounding parts. I do not ever remember secondary symptoms coming on subsequently to its application. I invariably direct the patient to wash the venereal or gonorrhœal ulcers three times a day with a little warm water, to dry them well, and then apply the *submur. hydr.*, ordering a dose of the *sulphat. magnesiæ* to be taken now and then, and sometimes a dose of *pulv. jalapii and submur. hydr.*, according to circumstances, but I never use mercury alone as an internal or a constitutional remedy.

I chiefly, however, wish to describe my treatment of the same kind of warts. When at Whitehaven I was once exceedingly annoyed and disappointed in the use of the *n. argenti* to them. A man came one day to the dispensary with warts all around the corona glandis, presenting a complete circular fringe of them. He had had gonorrhœa, but the discharge was nearly well. He was under the influence of mercury when he applied, having previously been salivated by a druggist. I first cut a piece from each of the warts with a pair of scissors, and then applied a stick of lunar caustic, repeating it as often as the eschars were removed, and indeed until I was wearied of its application, for no sooner did I think I had completely removed them, than they sprang up again as fresh as ever, and with amazing celerity. Observing the insufficiency of the lunar caustic, I looked around for a more efficacious remedy, and at length was induced to try the *liquor. ammon. acet.* It succeeded beyond my expectations, and I found that the stronger the saturation the more effectual it was, not causing irritation, either, like lunar caustic. Beyond this I merely ordered the man to take a dose of sulphate of magnesia now and then. The liq. ammon. acet., strongly saturated with ammonia, was frequently applied to the warts, and they disappeared in a very short time. Reflecting further on the subject, it occurred to me that the substitution of the pyrolignic for the common acid, might increase my power over such warts; and in 1829, when practising at Cockermouth, where I was surgeon both to the dispensary and to the workhouse, I made trial of it. Several patients there applied to me with this kind of excrescence. One of these, a female about seventeen or eighteen years of age, had several warts and warty excrescences about the anus and interior surface of the labia pudenda, varying from the size of a kidney-bean to a half-crown piece, accompanied with gonorrhœa. A lotion and sulphas magnesiæ were prescribed for her, with directions to apply locally the following liquids:—

℞ *Acidi Pyrolygnei* ʒi;
Carb. Ammoniæ q. s. ut ad satis saturandum.

I shall only add that the warts were removed by these means with surprising rapidity, and that she was soon free from all complaint. In my practice this liquid

has also proved a most powerful and efficacious remedy for warts on the hands. I direct my patients, first, to pare the excrescences down with a sharp knife or razor as much as possible without causing them to bleed, and then apply the liquid. The oftener it is used the sooner the warts will be removed. They should be pared down about every second day. I am, Sir, yours very respectfully,

E. WILKINSON.

Aspatria, Cumberland, March 29, 1834.

CASES OF HERNIA.

To the Editor of THE LANCET.

SIR,—Although the following cases have nothing very unusual in them, yet as I believe a plain statement of them will not be without good, perhaps you will have the kindness to insert them in your journal, at a convenient time. The bad state of the omentum, and its removal with impunity, in the first case,—the universal adhesion of the intestine and its separation with safety in the second,—and the peculiar situation of the hernia and testis, together with the almost sphacelated state of the intestine in the third, are the points which make them interesting.

I am, Sir, your obedient servant,

JONATHAN MONCKTON.

Brenchly, Kent, March, 1834.

Case 1.—On the 7th of June, 1833, I saw Mrs. Cox, of Five Oaks, and found her labouring under femoral hernia. I gave her four grains of purified opium, and the same quantity of camphor, which produced (as I have ever found it to do) the most desirable state of faintness and exhaustion, with profuse perspiration. Notwithstanding the remarkable efficacy which in our practice attends this remedy, the hernia could not be returned, and I consequently proceeded to the operation in the usual way. I found a small knuckle of intestine, and about two ounces of omentum. The latter had lost its natural texture, was in a lump, and so much discoloured, that I removed it at once with the scalpel. Only one small vessel bled, which was secured with a thin single ligature, and the parts were returned without difficulty. The next day she had distention of the abdomen, with extreme tenderness, and no stool. I gave her ʒj *Olei Ricini*, and the following :—

℞ *Hydr. Submur.* grs. xij ; *Pulv. Opii* grs. iij. Ft. pil. xij. Capiat j tertia quaque hora cum 6ta parte mist. sequente.

℞ *Mist. Sal. Com.* Dss; *Sulph. Magnesiæ* ʒvj ; *Mannæ* ʒij M. Ft. mist.

In a few days all the symptoms had subsided, and she did perfectly well.

Case 2.—On the 11th January, 1834, I saw Mrs. Tester, of Pembury, who was labouring under hernia. After giving our favourite remedy, I used the taxis for more than an hour, when the tumour, the size of a walnut, disappeared. Ordered haustus purgans. Next morning the report was, no stool or diminution of the symptoms. I went to her, and found the tumour again, which I could empty of its contents, but the intestine lay loosely without and would not return. It was evident that nothing but the operation would relieve her, I accordingly procured my instruments, and the assistance of some friends, when we found a considerable knuckle of intestine down, much inflamed, and adhering to the surrounding parts so completely, that many minutes were occupied in its separation. It was then returned without trouble ; violent inflammation of the reduced portion of intestine followed, but gave way to leeches and the usual remedies, and she soon recovered.

Case 3.—On the 27th of January, at four in the morning, I visited John Beecher, ætat. 32, with whom an assistant had been endeavouring, since eleven in the evening, to reduce an inguinal hernia, having, in consequence of great tenderness of the tumour, very properly bled him to ʒxviij, previous to giving the opium and camphor; the tumour proving irreducible. The hernia, instead of proceeding into the scrotum, had followed Poupart's ligament to near the superior anterior spinous process of the ilium, and presented also a small hard tumour at its outer edge. "That, Sir," said he, "is my testicle, which has never been down lower than my groin." On attempting to reduce the hernia, he complained so much of soreness in the tumour and severe pain across the umbilicus that I desisted, and directed 25 leeches to the tumour, the warm-bath, &c., during the use of which many unsuccessful attempts were made at reduction. On proceeding to the operation again, assisted by my friends as before (Mr. Prince of Tunbridge Wells, and my uncle), we found about three inches of intestine down, more than half of which was of a dark olive colour. After dividing the stricture, the intestine returned with great ease; but about two ounces of thickened omentum would not return without greater pressure than I felt justified in using. I therefore removed it with a scalpel. Four arteries were tied, one portion of each

ligature being left hanging out of the wound, and the remaining omentum was returned, so as to leave a small portion in the divided ring, hoping the ligatures might more easily be removed, and that a plug might adhere, and prevent any future return of the hernia. Singultus continued at intervals for about thirty hours; the bowels, however, acted freely, and the man has since perfectly recovered. I think, had I been in the situation of the patient, I should have requested the removal of the testis, that a truss might be more easily worn should one become necessary. We left it, however, in its former situation.

SCARLATINA.

To the Editor of THE LANCET.

SIR,—The following case of scarlatina is interesting as an instance of the great length of time which may elapse between the cessation of the complaint and the communication of the disease to a new-comer. In this instance it amounted to twenty-eight days. Such, at least, appears most probable, from the circumstance of the disease not appearing in the infant till the sixteenth day after its birth, and also from the mother not having been attacked by the disease in any shape, she having had no pyrexial, tonsillitic, or cutaneous affection. The case terminated fatally in an unusual mode, namely, by bleeding from the lips, nose, and mouth. I am, Sir, yours respectfully,

CHARLES GRAVENOR.

1, Rolls Buildings, April 7th, 1834.

On the 10th of February I was requested to visit a child that was suffering from pyrexia and enlargement of the cervical glands; there was also desquamation of the cuticle. It was stated to have been ill for five or six days previously, and to have had soreness of the throat and redness of skin, from which there was reason to conclude, that the disease was scarlatina. On the 22nd I delivered the mother of this child of an infant, the term of utero-gestation not having been quite completed. On the 11th of March the new-born infant was attacked with scarlatina, the eruption being limited to the extremities. There was no affection of the throat. On the 16th desquamation occurred, accompanied by œdema, and at the same time hemorrhage took place from the lips, mouth, and nose, to a very great extent, under the continuance of which (the blood also escaping from different parts of the surface where desquamation had occurred) the infant sunk.

REPLY TO OBJECTIONS AGAINST THE USE OF

TEA AND COFFEE.

To the Editor of THE LANCET.

SIR,—I have read the papers of Mr. Coles and Dr. Bent on the use of tea and coffee, as well as what has been said on the same subject elsewhere, with some surprise, as each of those gentlemen seems to me to imply, that the beverages in question more generally disagree with our constitutions than other aliments of daily consumption. To this I can by no means assent. It is well known that there is no one species of diet which invariably suits all constitutions, nor will that which is palatable and salutary at one time be equally so at another to the same individual. For instance, the most nutritious, the most simple, and, I think, the most natural food provided for us is milk; yet I will engage to produce twenty instances for each one adduced by Mr. Coles or Dr. Bent, where milk disagrees more than tea or coffee. How very general is it for us to hear, when we recommend milk to our patients, the following exclamations—"Why, Sir, milk will kill me; it lies like lead in my stomach." "It binds me so, I dare not take it." "It purges and gripes me in such a way that I can't bear it." "It makes me sick." "It makes me sleepy." "It fills me with wind." In short, all kinds of poisonous effects are attributed to this best of nature's beverages, new milk. Nevertheless how very absurd it would be in any one to attempt to persuade mankind that milk is unwholesome, because it will occasionally disagree with some of us.

Again, barley and its products equally disagree with some persons. I myself, for instance, thirty-six years ago, when walking St. Bartholomew's Hospital, used to derive more refreshment and comfort from a glass of "Whitbread's Entire" after the toils of the day than from any other beverage; but now if I were to take even a wineglassful of the same liquor, it would produce a severe attack of catarrh and urticaria, as would also a little barley-water, or even a few grains of barley. Yet "John Barleycorn" is a real and substantial friend to thousands, who would laugh at me heartily were I to try to persuade them that malt liquor was deleterious when taken in moderate quantity, merely because it does not agree with me.

The same may be said of medicines as of articles of diet, for we all know that there is no one medicine that invariably pro-

duces the same effect on the same person, or a similar effect on another, though labouring under the self-same disorder. For instance, a lady whom I saw this very day was for many years (both before and since her marriage, with an increasing family) a great sufferer from constipation of the bowels, accompanied with the most distressing hemorrhoids, and nothing which the materia medica could furnish, with the aid of surgery to boot, would keep the bowels in order, until, at last, merely half a dram of Epsom salts, and a few grains of magnesia, were prescribed, ever since which, now four years ago, this minim dose of an aperient has always kept her in the enjoyment of health and comfort. Sixteen times the quantity of the same medicine had frequently been taken before, without producing any aperient effect. The same will occur with all other medicines. Such is the idiosyncracy of some persons, that a very few drops of laudanum, two or three, will often procure sleep, when a full dose will have a contrary effect. I know a gentleman who always finds thirty drops act as an emetic.

I therefore presume to observe, in reply to what has been said of tea and coffee, that however these articles may (as they no doubt do) disagree occasionally with some of us, they are, nevertheless, as a part of general diet which is easy of attainment, as much to be commended as any other that could be substituted. I may here remark, that when I have thought tea or coffee has disagreed with a patient, I have requested the usual allowance of sugar or milk to be omitted, which has generally corrected the pernicious effect.

I remain, Sir, your obedient servant,

WILLIAM ENGLISH, Surgeon.

Denmark Hill, Camberwell,
2nd April, 1834.

CHROMIC ACID.

Mr. W. H. BULMAIN requests the Editor of THE LANCET to honour this paper with a place in the pages of his journal.

University of London,
April 7th, 1834.

Chromic acid is at present prepared from the mixed solution of chromic and hydrofluoric acids, which is obtained by conducting the terfluoride of chromium into water, driving off the latter acid by heat, or by decomposing a strong solution of bichromate of potass with fluosilicic acid gas, separating the solution of chromic acid from the sparingly soluble hydrofluate of silica and potass, evaporating to dryness, redissolving the chromic acid in a small quantity of water, and separating it from any remaining hydrofluate of silica and potass, by decantation. Both these processes must be conducted in platinum vessels, and as the difficulty of obtaining such vessels may sometimes be an objection to them, I have ventured to propose the following process as more easy of execution, and capable of being conducted without the aid of such expensive apparatus.

Decompose the terchloride of chromium by water, and agitate the resulting solution of chromic and muriatic acids with recently precipitated chromate of silver, until all the muriatic acid is separated, avoiding an excess of chromate of silver, as it is soluble in chromic acid. In this process the chlorine of the muriatic acid unites with the silver—the oxygen of the oxide of silver with the hydrogen of the muriatic acid—and the chromic acid that was united with the oxide of silver is set free, together with the chromic acid that was previously in solution. The pure chromic acid is obtained by decantation from the chloride of silver. If terchloride of chromium be not at hand, the chromic acid may be obtained by acting upon chromate of silver with muriatic acid.

STRENGTH AFTER RECOVERY FROM

MOLLITIES OSSIUM.

To the Editor of THE LANCET.

SIR,—In the last lecture of Sir Charles Bell, which I read in your journal with much gratification, the lecturer mentioned in the course of his valuable remarks, that persons who have recovered from the disease called mollities ossium, have become possessed afterwards, in a singular degree, of immense strength, which he accounted for by the increased density of their bones rendering them better fitted for powerful efforts.

I should be glad, Sir, however, with deference, to suggest that the increase of strength may be better accounted for by considering that the density of the bones in such cases is so great as to make them at once a species of permanent structure, only imperfectly subject to the laws of absorption and deposit—processes which are, in fact, almost unnecessary to their character at all. The bones of these persons seem to have been formed by nature of such an imperishable structure as to be perfected at once for all the purposes of

hard material in the body, not needing to be removed by absorption, or renewed by deposit. Nature, aware that she is diseased in the secretion of bone, trusts not herself to her future strength for perpetuating the organs of support in the usual manner; she appears to trust not to the slender possibility of such frames being enabled to continue or renew the healthy secretion of bone, but, to avoid the contingent danger of failure, does—when once she reacts and becomes possessed of the power of forming hard bone—construct it of a form sufficiently dense and imperishable as to render the vascularity of the material less necessary. Making it, thus, less pervious to vessels, she does so with the design that it shall be less exposed to change. Being, by this means, less vascular, a greater degree of vascularity is caused in the surrounding soft parts, and the proximate muscles, consequently, receive the revulsive circulation, and become more invigorated and developed, and better capable of performing those muscular efforts on which strength depends; for if the muscle remained in the state it presented previous to the existence of hard bone, it could affect no more than the muscle of a man whose bone was healthy and changeable. We have known men possessed of great strength, whose bones were never affected by disease, and which have ever contained simply their due proportions of constituent parts; yet the muscular structure of such men was in all instances extraordinarily developed. It seems probable, therefore, that the revulsive circulation from the osseous to the muscular structure, in this instance performs that office in the muscle which it would have executed in the bone.

I am, Sir, your most obedient servant,

S. A. I.

Great Prescot-street, March 18th.

CORONERS' INQUESTS.

Neglect of Medical Evidence.—Remuneration of Medical Witnesses.

To the Editor of THE LANCET.

SIR,—Some gentlemen seem struck, on attending coroners' inquests, at the paucity of medical evidence required by the coroner, and express their surprise at the disregard of facts thus evinced. When such persons have attended seventy or eighty cases of sudden and violent death, as I have done, and have been professionally summoned to about two-thirds of that number of inquests, they will consider the present as the usual mode of proceeding at inquests, and feel with tenfold force the necessity for a radical reform in them. When our Saxon ancestors first formed this court, medical science could afford but little assistance to the jury, but in the present day it can rarely be dispensed with at inquests; yet, if there be not evidence, ostensible at a glance, of the cause of death, or some one be not present who is interested in the fate of the decease, and urges inquiry to the utmost, verdicts of "accidental death," or "died by the visitation of God," suggest summary means to the coroner of getting rid of the duty he has before him.

The cases of sudden or violent death which have come under my observation, have generally been those of bodies found in the water, and the principal question put to me upon the inquest has been, "Have you observed any marks of violence on the body, or have you any reason to suppose that the deceased came by his death otherwise than by drowning?" On such occasions, having had no opportunity of making a particular examination, my answer has generally been "No," and this has been all the medical evidence required at the inquest, although, in many cases, the person of the deceased has not been known to any one present, and there has been no evidence whatever to show how the body got into the water, or whether murder had not been previously committed. The *only* post-mortem examination I ever made in any of these cases, was that of the body of the boy Pavior who was murdered, and that was performed (now about twelvemonths ago) at the request of the parish officers, before the coroner knew anything of the matter, or perhaps the death might have been pronounced "accidental." I was once summoned to attend an inquest held on the body of a man taken out of a pond, who had a considerable bruise upon his head, evidently produced during life; and although I pointed this out to the jury, when they were viewing the body, I was not sworn by the coroner, and the court was satisfied with asking some silly questions as to the possibility of restoring a drowned man whose limbs had become rigid, the bruise on his head either being considered unworthy of notice, or taken for granted that it was produced by a fall on the ice in the pond. The verdict returned was, "found *drowned*." I could easily multiply similar cases of haste and negligence. I trust the subject will not be forgotten during the parliamentary investigation of medical affairs.

Connected with this subject is that of paying medical men for attending inquests, making post-mortem examina-

tions, &c.; and I am happy to find a very general determination among medical men, in this parish at least, not to sacrifice their time in these investigations without remuneration. The following instance will show the spirit which has prevailed amongst them. Some time since an inquest was held in the Hampstead Road on the body of a girl whose death was suspected to have been caused or accelerated by ill usage. The inquest was adjourned to a second day, to give time for post-mortem examination, and the beadle was directed to procure a medical man to make it. He first applied to the gentleman who was called in when the girl was dying, but received a refusal unless payment were promised for the labour. The beadle next went to the parish surgeon for the district in which the inquest was held; but that gentleman likewise refused, on the ground that it formed no part of his parochial duties. On the following day the beadle stated this to the Board of Directors for the parish, and requested instructions. The Board immediately took the matter into consideration, and finally decided that it was not the business of the parish to find a surgeon for the purpose required, and that, consequently, they could not expect their medical officers to perform the task. The beadle was then desired to inform the coroner of this decision. The coroner, upon receiving the message, went to the workhouse, where the board was then sitting, and, failing to convince its members of the propriety of their complying with his wishes, issued an order commanding the overseers to find a medical man, or refuse to do so at their peril. The demand was unsuccessful, and several other medical men were applied to, but all refused to act, until at last the coroner offered to give his fee, a guinea, to any medical man who would do the duty, when a gentleman undertook and performed it.

I am informed that the parish will be indicted by the Coroner, and the affair settled by an appeal to law. I am, Sir, in haste, your most obedient servant,

JOSEPH CURTIS.*

Camden Town.

* We received this letter some time since, and have to apologise to Mr. Curtis for the delay which has occurred in its publication. It was mislaid until the present week, but as it has not suffered from age, and contains facts of much interest, we at once, on repossessing it, give it insertion. Such facts as are contained in this and the following letter, must find their way, on personal testimony, if possible, before the members of the Parliamentary Committee. Did the coroner "appeal to law?"—ED. L.

ATTORNEY CORONERS.

Remark of Mr. Justice Taunton on their want of legal knowledge.— Murder by Oil of Vitriol, regarded as accidental burning to death.

To the Editor of THE LANCET.

SIR,—Mr. Justice Taunton, when commenting on the malpractices of coroners at the last Lancaster assizes, observed from the bench, that coroners were generally deficient of *legal* knowledge and discrimination. Had the honourable and learned judge pointed out that they were still more deficient of *medical* knowledge and discrimination, he would also have announced one of the most serious and notorious evils in the government of this country. The two defects, however, will not admit of comparison. The county rates may occasionally be swelled by the attendance of unnecessary witnesses, or the depositions may sometimes be needlessly lengthened; but the lives of human beings will hardly be put in jeopardy by such causes, "Want of legal knowledge," says the judge! Why the parties more immediately addressed on this occasion actually were *attornies*—attorney-coroners! It is a want of proper *legal* knowledge that has been especially urged against medical coroners. You have, yourself, however, Sir, expaciated so forcibly on this subject in THE LANCET, that I shall forbear to say more upon it. Cases like the following speak for themselves, and broadly expose the deplorable condition of the law coronerships.

On Saturday the 1st of March last an infant, aged six weeks, the son of Robert Greenhalgh, a weaver, residing near Bury, Lancashire, died from being accidentally burnt to death, as was alleged, while lying in a cradle. On Monday, the 3rd, an inquest was held on the body by a young man 21 or 22 years of age, *who acted as deputy** to Mr. Ferrand, the district-coroner. The jury heard the evidence of the child's father, who stated that it had been unwell in its bowels, in consequence of which its mother went out to purchase a small quantity of gin to give the child; that, during her absence, it lay in the cradle near the fire; that he was in his

* Is this legal? T. W.—The proceedings did not constitute a "coroner's inquest."—ED. L.

weaving shop when he heard it scream, and on going to the cradle, found that its clothes were in flames, owing, as he supposed, to a spark having flown from the fire to the cradle; that all its clothes were burnt off before he could extinguish the flames, and that the child died in a few hours. A verdict of "accidental death" was returned, and the child was buried. A poor woman, who lived near Greenhalgh's house, who had seen the body of the child, had her suspicions excited by the appearances it presented, that the child had not been burnt to death, and dark rumours began to be circulated in the neighbourhood, when it was known that two days previous to the fatal event the father had begged a little oil of vitriol at some bleach works in the neighbourhood. In consequence of these rumours the body was exhumed, and inspected by Mr. Woodcock, surgeon, of Bury, on the 19th ult. The moment the body was placed before Mr. Woodcock, he saw "what, we understand, might have been discovered by any man of the most ordinary penetration, that the child had not been burnt to death, but that some corrosive fluid had been administered to it,—a part of which had run out of each side of its mouth, and down upon its chin and neck, having marks which could not possibly have been made by anything but a fluid." No trace of external injury was visible, excepting about the mouth,—a fact of itself conclusive that the evidence of the father was false. On opening the mouth of the child, the most unequivocal and palpable proofs of the action of corrosive fluid presented themselves, and on opening the body, the appearances of the stomach left the matter beyond the slightest doubt. The child had unquestionably been destroyed by pouring oil of vitriol down its throat; and the appearances were such as to make it matter of wonder, not that they should have excited the suspicions of an old woman, but that any man, however torpid or ignorant, could have looked at the body for a moment without discovering the real cause of death. The father was allowed to abscond, and has not since been heard of.

At the close of my last letter, published in THE LANCET of the 22nd, it is stated that Mr. A. was driven from his office,—it ought to have been Mr. D., the late Doctor to the Liverpool coroners.

I am, Sir, your obedient servant,

THOMAS WEATHERILL, M.D.

Liverpool, March 31, 1834.

THE LANCET.

London, Saturday, April 12, 1834.

PUBLIC attention has been so intently directed of late to the absurd laws which regulate the mechanism of our colleges, companies, and universities, that there is danger of the not less pernicious ordinances of the incorporated hospitals of Great Britain and Ireland escaping investigation longer than they ought. But while crushing the head of the hydra, the victor's eye must be bent on the other members of the monster, or evils of equal magnitude may result from their preservation. It would be fatally inconsistent in any scheme of medical reform, to prune the cankered stocks of Oxford and Cambridge, and leave those of Guy and St. Bartholomew untouched. Hospitals and schools of medicine are too intimately connected in these countries, to be advantageously ruled by laws which regard them as establishments independent of each other. The legislative remedy must extend to both, or salutary effects will be produced in neither. A moment's reflection on the uses and circumstances of our hospitals, must make their influence in the improvement of British medicine sufficiently apparent; they are, in truth, the theatres in which the student ought to be enabled to witness, on the most comprehensive scale, the application and results of the elementary knowledge which he has acquired from lecturers and writers. The existing endowed medical charities are, moreover, the only public establishments to which the pupil can resort in these kingdoms for professional study, for as yet there has not been organised and endowed a single hospital in Great Britain for clinical instruction.

Without intending at present to enter at length upon the subject of the history

of the constitution and the governing policies of hospitals, we advert to them for the purpose of making a few brief remarks on the appointments to medical offices in those institutions. The title to these should be merit and competency alone. But what is the fact? In whom are those appointments at present vested? Why, public and national as are the great hospitals of the country, it is astoundingly true that a few private individuals, under the name of "Governors," have the power of putting a complete veto on everything in the shape of medical instruction in them, whensoever they may choose. Public indignation would perhaps afford a check to the execution of so summary an act of tyranny as this, but how truly and perfectly is it in the power of the "Governors" to effect the same result through the medium of the appointments to the medical offices! Nay! A thousand times has it been demonstrated in the pages of this Journal, that they not only have the power of wholly extinguishing clinical instruction in our hospitals, but that they do most effectually prevent it in nine instances out of ten, by thrusting into the chairs men possessing neither capacity nor inclination to afford to students that invaluable insight into the characters and treatment of disease, which is to be obtained only at the bedside of the sick.

We may justly call the attention of the Parliamentary Committee to this subject, from the circumstance that the questions contained in the shrewd and comprehensive circulars which they lately published, do not evince any suspicion of the extent to which the corrupt ingenuity of men has gone in securing to their sons, nephews, and other dependants, an hereditary monopoly of hospital appointments. The proofs of this appalling abuse are to be found in almost every induction to hospital chairs which has been made for the last fifty years. Questions on the subject must be put, and keenly pursued, by the Committee; and the replies, we promise them, will disclose almost incredible facts to unsuspecting hearers.

The Dublin school has just afforded us another glaring instance in point. Many of our readers are, doubtless, aware that *Steven's Hospital* holds the same rank in Dublin, as does one of the "recognised" metropolitan hospitals in London. It contains the greatest number of beds of any hospital in the former city; and besides the munificent endowment of the founder, it enjoys, we believe, a large annual grant from the Government. Such, in fact, is its position, that to become a surgeon of *Steven's Hospital* is considered in Dublin to be placed on a short and easy road to professional fame and fortune. In what manner such an office—one so important to society, and of such rich indirect emolument to the possessor—ought to be filled, we need not say. Of course none but a man of well-proved talents and great experience ought to hold it. Yet, in the true spirit of the British and Irish hospital system, *a lad*—the son of Mr. Colles, surgeon to the hospital—a youth, who but a short time since obtained his "license" at the College of Surgeons, and who, we understand, has very little chance of becoming a Cooper or a Dupuytren, has just received an important appointment in the institution. The parties concerned in this scandalous transaction, which robs merit of its legitimate reward, and exposes the afflicted poor of Dublin to the dreadful contingency of suffering less from the tortures of disease than from the resources of medicine, had not even the decency to wait for a vacancy by death or resignation; but despising even the appearance of that quality, installed their chubby-headed clève amongst the other

incumbents of the institution, *as house-surgeon* of the establishment,—Mr. Cusack politely making way for the "little Lama," by accepting the office of "visiting surgeon!"

Shame on the authors of this crime. If, indeed, the dark vista of intrigue and corruption which such deeds disclose, were not brightened by those flashes of indignation which are emitted by the contemplators of miscreancy so gross, we should turn from the scene with feelings of despair. But we see in the gleams of anger and disgust, rays of promise and of hope, and feel assured that the blaze of wrath will, ere long, acquire a power that shall scare from their seats, far and wide, the unworthy usurpers of our hospitals. Is it to be borne that a mere youth—without experience, without reputation for talents, or even industry in his profession, shall be appointed to fill the first surgical chair in Ireland, solely because he is the son of an Abraham Colles, a "visiting surgeon" of Steven's Hospital? For what purpose has the man of genius and of mind, exercised his genius and cultivated his faculties, devoted his time and expended his fortune, acquired knowledge and gained experience, if all is thus rendered useless to society and to himself? Why has he added to the gifts of nature the qualifications of long and painful application to science, if he is thus to be robbed of the legitimate and often sole, though indirect, reward of his powers and exertions?

We turn to the remedy—to the means of remedy—to the Parliamentary Committee,—and respectfully urge them to probe this new and flagrant specimen of the workings of our present hospital system. Let them demand of the parties concerned in the degrading promotion, by what means this lad was elevated from obscurity to a height so commanding—over the heads of the numerous highly qualified men who grace the profession in Dublin, and might lay a fair claim to the office. The authors of the iniquity are all forthcoming if demanded, and the recency of its perpetration precludes all forgetfulness of the circumstances of the transaction. Let Mr. Colles, and his accomplice in this national professional insult, Mr. Cusack, stand forth before the Committee, and lay bare the truth; it will yield a fair and average specimen of the manner in which British medical science has, almost from time immemorial, been spoiled of its just but never-ceded honours. Let the investigation be a speedy one. Its institution will crush *arrangements and designs* in the same quarter, as abominable as this, but yet in embryo. Let no compassionate respect for "character" (!) hinder the scrutiny. Unless the probe be used with a firm and skilful hand, the depth of the disease will enable it to elude all search, and keep its malignancy from the knowledge of an indignant Parliament.

Encouraged by their unsuccessful efforts in the late disgraceful struggle at the General Dispensary, the members of the Anti-Medical Committee of Aldersgate-street have lately been exercising their charitable influence, in order to control the election of a parochial surgeon. There were two candidates for the office,—Mr. Lobb, a gentleman who opposed the committee during the contest carried on by that body against their late respectable medical officers; and a Mr. Burrows,—on *this* occasion the *protegé* of the anti-medicals. We hardly need state that the sound understanding and proper feelings of the majority of the rate-payers, prevailed over the paltry manœuvres of the enemies of the profession. Mr. Lobb was the successful competitor, and the leagued opponents of the profession were subjected to a degrading defeat and most severe castigation. Mr. Lobb, in thus receiving

the free, unbought franchises of his neighbours, is early rewarded for the line of honourable and generous conduct which he so perseveringly maintained throughout the whole of the Dispensary struggle.

What—we take this opportunity of inquiring—has become of YATES, CASWALL, WHITSED, WYATT, and ROBERT ROWLEY, M. D.? If these men, because they are not seen in public, think their delinquencies are *forgotten*, we can assure them that they labour under a delusion, which may prove at present more agreeable to their feelings than it may hereafter tend to their professional advantage. Do not these men already understand what *must* be the termination of their career of NOTORIETY, from the signs of the moderated or softened feelings of friendship observable amongst their official patrons? In a word, we ask the medical officers of the Aldersgate-street Dispensary, we ask of those men who agreed to purchase *place* at the dread cost of professional character and reputation, if it should so happen that they are not employed professionally as the *family* advisers of the members of the ANTI-MEDICAL COMMITTEE, how they could expect to occupy a favourable position in the opinions of the majority of the profession? But above all, we would ask them whether they conceive it is likely that they will occupy a less degrading position than the one they at present hold, through the honourable decision of their professional brethren, by entering into a new combination with their anti-professional patrons, in opposing the election of a man like Mr. LOBB to the office of parochial surgeon, merely because that gentleman had made every possible exertion on a former occasion to sustain the respectability of the profession, and the utility of our charitable medical institutions?

ON several occasions we have mentioned in terms of dispraise, certain legal proceedings which had been resorted to by Mr. EDMUND BACOT, solicitor to the Apothecaries Company. Mr. BACOT, in consenting to become the agent of that body, virtually stipulated to be rendered an object of dislike with the whole profession. We are assured, however, that in all the relations of private and domestic life, he was an amiable and excellent man; and, as such, we have to record with feelings of deep regret, his decease, which took place at Ashburton, in the early part of last week. He was travelling in a post-chaise, when the post-boy stopped for some purpose and left his horses. The horses became frightened, and started off at a rapid pace, when Mr. BACOT, while looking out at one of the windows, sustained so severe an injury from his head coming in contact with the branches of a tree, that he expired a few hours after the accident. If the public would but insist, that in addition to the short reins used by the postilion, there should be also attached to the heads of the horses, long reins, communicating with the front of the vehicle, and so placed as to be at the command of the travellers within, accidents of the dreadful character of the one we have here recorded would be exceedingly rare.

WHATEVER may have been the power of Sir JAMES M'GREGOR during the glorious times of high Tory favouritism and delinquency, we can assure Dr. DAVY, that medical appointments in the Chatham Military Hospital cannot now be obtained easily. Fortunately for the public, Sir JAMES is occasionally opposed by some insurmountable difficulties at the Horse Guards.

UNIVERSITY OF GLASGOW.

CHAIR JOBBING.

(From our Glasgow Correspondent.)

Those members of our faculty who interest themselves in the cause of medical reform, cannot see without deep concern the welfare of our ancient and respectable university again sacrificed to political intrigue and private jobbing. The rapid decay of the reputation of the sister university of Edinburgh, through the party plottings and hereditary succession of its professors, would, it might have been thought, have afforded sufficient warning to our Legislature, but we are about to have another and a third opportunity of proving the principles upon which the election of our professors is conducted. I allude to the appointment to the Greek chair, which Sir Daniel Sandford has promised to vacate on his election as a member of Parliament,—the two duties of teaching Greek in Glasgow, and making laws in Westminster, being perfectly incompatible in the person of one man. The election of Dr. Badham to the chair of medicine, and the circumstances connected therewith, are still, and will long remain, fresh in the recollections of all medical reformers. It was impossible to have contrived anything more vexatious and humiliating to our University, than the consummation of the crafty intrigue on the part of the President of the London College of Physicians, by which the Duke of Montrose, then the political Leviathan of the north, was induced to appoint a man to the chair of physic, whom that corrupt body thought it necessary thus to provide for, because, forsooth, he was one of their "Fellows," and one whose "high moral feelings," and practical and literary talents, were not duly appreciated in your Babylon. Indeed, we never could have expected that a physician of any reputation and acquirements would quit the courtly and affluent metropolis of England, to teach the offspring of our Glasgow manufactory. Besides, there were plenty of able and willing men on this side of the Tweed, well calculated to disseminate a knowledge of the practice of physic.

The recent appointment of Dr. R. Lee to the chair of midwifery is in unison with that of Dr. Badham, and has produced a strong sensation against the sanctioning government. It was a daring job in my Lord Melbourne, to appoint to a chair in the Glasgow University a man who had no other claim to the situation than that of having been a tutor in his Lordship's family, and who is only known to us as having been a third-rate lecturer in London, and as a man who endeavoured to acquire for himself the merit of a discovery, which was proved by Dr. Granville to have been many years before promulgated by Professor Lauth.

PARLIAMENTARY MEDICAL COMMITTEE.

QUESTIONS ADDRESSED TO OVERSEERS AND PAROCHIAL MEDICAL OFFICERS.

The following documents, printed by order of the House of Commons, have been forwarded to the overseers of the poor throughout England and Wales, with the directions contained in the order prefixed. The answers are to be returned by post to the clerk of the House of Commons, London.

House of Commons. *Mercurii, 26 die Martii*, 1834.

Ordered, That the overseers of the poor of every parish, township, or other place, in England and Wales, do answer the questions contained in the Enclosure No. 1—and do procure from the medical man appointed to take charge of the sick poor of their parish, township, or other place, answers to the questions contained in the Enclosure No. 2.

J. H. Ley, Cl. Dom. Com.

No. 1.—*Questions to be answered by the Overseers of the Parish (or Township) of , in the County of .*

1. Is any medical man appointed or employed to take charge of the sick poor of your parish township?

2. By whom is the medical man appointed, and what is the mode of appointing him?

3. Is he appointed for a year, or for what other time?

4. What is the name of the medical man?

5. What did the care of the sick poor cost the parish (or township) in the year ending the 25th day of March, 1834?

6. Is a yearly salary paid the medical man? Is the amount of the yearly salary fixed by public tender? Was the lowest tender accepted at the time of the last appointment? What was the amount of the salary for the year ending the 25th day of March, 1834?

7. When did the practice begin of offering the appointment of medical man to be bid for by public tender?

8. If the medical man is not paid by salary, state in what manner he makes his charge?

9. In the case of payment by salary, does the medical man engage to provide medicines? If he does not provide the medicines, who does? And what did the medicine cost for the year 1833?

10. Is the medical man required by the parish (or township) to attend those only who are receiving relief out of the rates; or is he also required to attend other poor persons, although not receiving relief out of the rates?

11. What description of cases is the medical man appointed by the parish required to attend? Is he to attend medical, surgical, and midwifery cases? Is he required to vaccinate? Is he required to attend inquests?

12. If the medical man gives a certificate of illness, do the overseers thereupon grant money relief to the person to whom the certificate was given?

13. Does the parish (or township) subscribe to any general hospital, infirmary, or dispensary?

14. Are there any and what hospitals, infirmaries, or dispensaries, situate within your parish (or township)?

15. How far from the church, or most populous part of your parish (or township), does the medical man reside, who is appointed to take charge of the sick poor?

No. II.—*Questions to be answered by the Medical Man appointed or employed to take charge of the Sick Poor of the parish (or township) of in the county of*

1. What is your name?

2. What is your rank in the profession? Where did you study medicine? Where did you obtain your degree, or diploma, or license to practise?

3. Can you state the names and rank in the profession of the various persons practising medicine or surgery within the parish (or township) to the overseers of which these questions have been addressed?

4. How many persons or families did you attend at the expense of the said parish (or township) in the year ending the 25th March, 1834? What was the mortality among those you so attended?

[*The medical man may, if he pleases, state the number of persons who were ill, and died, of each several disease or complaint.*]

5. Is there an infirmary attached to the workhouse of the said parish (or township)? If so, how many sick wards are there in the infirmary? How many beds are there in each sick ward?

6. How many patients were admitted into the sick wards in the above year, and how many patients were there in the sick wards on the 25th of March, 1834? What was the mortality of those admitted in the above year?

7. Class the patients received into the sick wards in the above year, if you are able to do so, into—I. Medical; II. Surgical; III. Midwifery; stating the number of each class?

8. Class all the patients you attended at the expense of the parish (or township) during the above year, if you are able to do so, in the same manner as in question 7, stating the number of each class?

9. Is there any ward for lunatic patients, temporary or permanent? and if so how many beds are there in the lunatic ward? How many lunatics were admitted into such ward during the above year? How many such patients were there in such ward on the 25th of March, 1834?

10. If no lunatic ward, what number of lunatics were attended or maintained elsewhere at the expense of the parish (or township) during the above year; and at what expense? How many lunatics were being so attended or maintained on the 25th of March, 1834?

11. Did Indian or malignant cholera prevail in the said parish (or township) during 1832 or 1833?

12. Was a Board of Health appointed to act in the said parish (or township) in either or both of the years 1832 and 1833, and if so, by whom was the Board appointed?

13. Of how many persons did the Board consist? How many of these were medical men; and of what ranks in the profession were those medical men?

14. Were any cholera hospitals established in the said parish (or township) during 1832 or 1833? How many such were established? How many medical men were attached to every such hospital?

What were their names and rank in the profession?

15. How many patients in your parish (or township) were affected with cholera in 1832 or 1833? What was the mortality in each of those years from that disease?

16. How many cholera patients were admitted into each cholera hospital during 1832 and 1833? What was the mortality in each?

17. What funds were raised to meet the expenses attending the care of the cholera patients in 1832 or 1833?

18. What remuneration did each medical officer of a cholera hospital receive for his attendance on each hospital?

19. How many medical men were appointed to attend cholera patients at their own houses? What are their names, and their rank in the profession?

20. What remuneration did each receive for such attendance? Were they also paid for the cost of medicines supplied, and if so, what was that cost?

HOPITAL DES ENFANS MALADES, PARIS.

EFFECTS OF THE WHITE OXIDE OF ANTIMONY IN THE PNEUMONIA OF CHILDREN.

The beneficial effects of antimonial preparations, on certain forms of inflammation, and the high doses to which the administration of this remedy has been carried by the Italian and French physicians of the present day, are well known. The subject has been still further investigated very lately at the *Hotel Dieu* by Messrs. Trousseau and Bonnet, and several cases have been treated at the *Enfans Malades* by Messrs. Guersent and Baudelocque, which satisfactorily prove the therapeutic effects of antimony on parenchymatous inflammation of the lung in the young subject. We shall take this opportunity of referring briefly to the observations of M. Trousseau, and shall then notice a few of the most remarkable cases just alluded to.

The experiments of M. Trousseau were conducted under the eye of M. Recamier at the *Hotel Dieu*, for the space of eighteen months. The effects of antimonial preparations on the economy are various; but it is our intention to consider merely their antiphlogistic properties, which, according to M. Trousseau, are more powerful than those of any other substance in the materia medica. Antimony was administered, chiefly in the form of tartar emetic, to individuals affected with a great variety of non-febrile diseases, as chronic rheumatism, sciatica, chronic catarrh, &c., and produced important modifications in the state of the circulation, respiration, and urinary secretion.

1st. The *circulation* is calmed in an extraordinary manner under the influence of antimony; the pulse becomes more feeble and slow. M. Trousseau has seen the pulse brought down in three days, from 72 to 44, at which latter rate it continued to beat for a considerable time. However, the diminution seldom exceeds one-fourth or one-fifth, while the strength of the pulse is lowered in a very remarkable degree.

2nd. The *respiration* is affected soon after the influence of the remedy is felt in the circulation; in some cases the retardation is very great, the rate of respiration falling from twenty-four or twenty in the minute to six; but although the patient breathes in this extremely slow manner, he suffers no difficulty or embarrassment in his respiration.

3rd. On the *secretion of urine*. When antimony does not determine vomiting or purging, it constantly augments the secretion of urine. The fact is indisputable, although it has not been noticed by any of the authors who have lately written upon the action and effect of antimonial preparations. We here see some analogy between the effects of antimony and other remedies which exercise a sedative influence on the circulation, as digitalis, squills, vegetable acids, &c.; both these, at the same time that they lower the pulse, stimulate the kidneys also, and increase the secretion of urine. It has been generally considered, that the local irritating action of antimonials is in direct proportion to their solubility, and this, in fact, is true; but the experiments made at the Hotel Dieu demonstrate this curious and inexplicable fact, that pure antimony, in its metallic state, acts almost as energetically as tartar emetic.

Fifty-eight patients, affected with acute pneumonia, were treated by M. Trous-

seau, with antimony alone, no other remedy or therapeutic agent being employed. Of these, two cases terminated fatally, one that of an old woman, who came into the hospital on the eleventh day of the disease; the other was the case of a man who was treated before the fifth. Tartar emetic, metallic antimony, the protoxide, deutoxide, tridoxite of antimony, antimoniate of potass, and Kermes mineral, were administered to these patients. The general effects of the remedy were invariably the same, but the local effects frequently differed according to the form in which the antimony was administered. One of the earliest effects of the remedy is seen in the altered state of the *expectoration*. Of the fifty-six patients who were cured, the peculiar expectoration of pneumonia had disappeared in fifty-four, within forty-eight hours after the administration of the antimony; the rusty-coloured bloody expectoration soon assumed a yellow tinge, and in three days was converted into that of acute catarrh. In one-fourth of the cases treated at the Hotel Dieu, the expectoration peculiar to pneumonia was removed within twenty-four hours. The diminution of the pulse in *strength* and *frequency* was a constant phenomenon, and took place very rapidly, arriving at its maximum about the fifth day of treatment. Of the fifty-six patients above mentioned, the febrile heat persisted beyond forty-six hours in five only, and of these, three were relieved from this symptom on the fifth day, and the two others on the sixth. The persistence of febrile heat and frequency of the pulse took place only in those cases where the pneumonia had passed into its third stage, and suppuration had consequently existed. The diminution of the number of respirations in a minute was equally constant, but was not on all occasions proportionate to the retardation of the pulse.

We have (says our reporter) had occasion to verify this remark of M. Trousseau, at the Hopital des Enfans, where we have seen the relation between the respiration and pulse in cases of pneumonia excessively various, and apparently governed by the state of the lung itself. As to the local effects, tartar emetic generally produces vomiting and purging when it is first administered; metallic antimony has also the same effect in a few cases, while the insoluble preparations seem to have no effect whatever on the stomach or bowels. It is necessary to remark, that bleeding was never employed as an auxiliary, and those cases were most speedily cured, where the fever was most violent, the pulse full and intermitting, the skin excessively warm, &c., in short, where the symptoms indicated a very high degree of inflammatory action. M. Trousseau, indeed, is of opinion, that bleeding from the arm rather diminishes the good effect of antimonials, for he has remarked that it is much more difficult to bring down the pulse and fever, and to lower the respiration, after the patient has lost one or two pints of blood.

One of the most remarkable circumstances attending the treatment of pneumonia by antimony, is the rapid manner in which the patient recovers after the inflammation has been once subdued by the remedy; the period of convalescence is always short, and a relapse hardly ever occurs, unless the patient is guilty of some great imprudence, or the administration of the antimony has been suspended too suddenly. For females, and young subjects, we may commence by giving twenty grains of the white oxide; if for adults, or old people, thirty grains; the dose may be increased by one half on the next day, and this should be continued until the febrile symptoms are entirely removed, or even rather a few days longer; the dose should now be diminished gradually, in proportion as the patient partakes of more aliment. It is worthy of remark, that the effects of antimony were considerably modified by the peculiar state of the atmosphere during the prevalence of cholera in Paris, and that a very small dose often produced at that time gastric disorders of an unpleasant nature.

The efficacy of antimonial preparations, in cases of pneumonia has been equally established at the Hopital des Enfans Malades, where M. Baudelocque has been in the habit of employing them for a long time. There is perhaps no other affection to which young children are so exposed during the course of eruptive diseases as pneumonia, and the period at which

the inflammation is developed, the insidious manner in which it comes on, and the already reduced state of the little patient, render it a very dangerous and fatal complication. Thus a child is attacked during the suppurating or scabbing stage of small-pox; he has been reduced to an excessive state of debility, by a disease which has continued with severity for twelve, or even twenty days; the patient is perhaps affected with diarrhœa, and the irritable condition of the gastro-intestinal symptom will not permit us to act upon the bowels; here the administration of purgatives, or the employment of general bleeding, is totally inadmissible, and we have no hesitation in affirming that the prompt administration of antimony is absolutely necessary, to afford the patient any chance of recovery. The greatest care and attention are required on the part of the physician to detect the existence of pneumonia in many of these cases, especially when the child is very young; when the inflammation is confined to a limited portion of the parenchymatous tissue, and when both lungs are affected at the same time.

The presence of pneumonia in the infant is seldom declared by any remarkable degree of febrile heat; there is no expectoration, little or no cough, and without the assistance of auscultation we would be perfectly ignorant of the existence of the disease; but when the inflammation is lobulated, and attacks corresponding parts of both lungs, the diagnosis, even with the assistance of the stethoscope, is extremely difficult. We can appreciate no difference of sound between the two sides of the chest, which are equally dull to percussion; and when the portion of lung affected is deep-seated, the respiratory murmur often masks any rale which the stethoscope would easily detect under other circumstances.

The following cases are examples of pneumonia supervening during the course of small-pox:—In the first (that of Lefort) the pulmonary inflammation came on at the late period of the disease in a very insidious form, and when the patient was much reduced; it was not recognised by the physician, and proved quickly fatal. In the case of Bernard, the beneficial effects of the white oxide were quickly produced; the eruption, which was suspended in its progress during the development of the inflammation, afterwards resumed its ordinary march, and the patient's health was rapidly re-established under the influence of the antimony.

SMALL-POX FOLLOWING SCARLATINA—PNEUMONIA—DEATH—RED HEPATIZATION OF PORTIONS OF BOTH LUNGS.

Lefort, a boy, ten years of age, of good constitution, and generally enjoying good health, was received into the hospital on the 30th of July, 1833. He had been ill for five days previously. On the 31st we found the lower part of the body covered by that species of eruption of scarlatina called *piquetté*, the face, neck, and arms, being quite free from it; the child has had no delirium or convulsions, but is much depressed; the lips are dry, and exude a membranous concretion; the state of the fauces is very characteristic; the tongue and amygdalæ are red, and the latter is swollen, so as to impede deglutition; the voice is also a little altered; thirst; no vomiting or diarrhœa; skin warm; pulse 120; the chest was carefully examined, and presented nothing irregular, but the child coughs a little.

Oxymel; Lavement; Gargles.

The scarlatina continued to run its course without any unfavourable symptom, and was followed by an abundant desquamation of the cuticle, even on those portions of the body where there had been little or no trace of eruption. From the 4th to the 8th of August the child continued without fever, eating a little soup each day. On the 9th the fever returned; there was considerable thirst, headach, and vomiting, with uneasiness about the epigastrium; the symptoms persisted for forty-eight hours, and on the 12th there appeared an eruption of papulæ about the face and arms; the vomiting now ceased, and the thirst was diminished; the pulse was full, 100; tongue red and foul; no pain in the head, or cough; the child does not sleep at night, but is tranquil.

Decoct. of Marsh-mallows; Gum-Potion.

From the 13th to the 15th the march of the pustules was slow and irregular; none of them were filled, but they continued red and were very confluent on the face and hands, where they were united by an erythematous blush; there were no pustules on the trunk. The pulse on the 15th was 80, in the evening 120; the tongue was red and dry; the skin moderately warm;

and there had been some delirium the preceding night. The child appears weak, and lies in a stupid way, rolled up in the bed.

Foot-bath; Sinapisms to the Feet.

16. Continues nearly in the same state; pulse in evening 96; is the same at morning visit. The skin is hot, but not so red as before, for many of the pustules are fading without filling; the child coughs a little; had no delirium or pain in the head last night; no stool; the interior of the mouth is covered with a crop of pustules.

Alum-garyle; Lavement.

17. The child slept well last night; pulse 128; the pustules are all fading on the face, which is much swollen. The skin is not very warm; one stool; no pain of head, nor much thirst.

19. The crusts are now forming on the face; the skin is excessively hot, and the pulse full. The child had no rest during the night; he coughs a little; has had no evacuation.

21. Desiccation continues; the face is covered with a mask of black crusts; no sleep during the night, but free from delirium; the skin dry and very hot; pulse small and quick; no stool.

Wine and Water; Lavement; warmth both for hands and feet.

22. Face continues in same state; the crusts are not so confluent on the extremities, which are now free from tumefaction; pulse is small, 100; the skin moderately warm; no diarrhœa or salivation; head unaffected.

This state continued without change for a few days, and on the 25th the eyes, which had been slightly inflamed without attracting much attention, or without causing any uneasiness to the patient, were examined; there was some redness of the right conjunctiva; the cornea was perforated; the aqueous humour evacuated, and the sight of that eye completely destroyed. The inflammation of the left eye seemed moderate.

Oxymel; Opiate Collyria; 8 Leeches to the Temples.

The leech-bites have bled well, and the patient felt relieved; very slight fever; the ulceration of the right cornea is extending, but the right eye was so strongly closed by incrustations that we could not examine it; no cough or diarrhœa. *Contin. remedia.*

29. The inflammation of the left eye has continued, and terminated in staphyloma, destroying vision altogether. Most of the scales have detached; the child appears better, and is free from that state of depression in which he has hitherto lain. He has some appetite; the skin is not feverish; the pulse fuller than before and 90.

The condition of the patient remained stationary until the 6th of September, when all the scales had fallen off; the child had some appetite and slept well; the tongue was quite clear, and the abdominal viscera unaffected; but we now noticed a short, feeble, dry cough, which annoyed the patient a good deal. The chest was examined, but the sound rendered on percussion was good, and we could discover no râle; pulse small, 76.

Decoction of Mallows; Gum-Emulsion; Collyria.

The cough continued for a few days, and then was much mitigated; the patient, in the mean time, did not complain of any pain in the chest, difficulty of respiration, or other uneasiness, in consequence of which the state of the thoracic viscera was not explored by the use of the stethoscope; from this period he commenced to get weaker, without any remarkable symptom being exhibited, and died quietly on the 14th.

Post-mortem Examination on the 15th.

The pleuræ were healthy, but the superior and inferior lobes of the right lung were completely hepatized, the middle lobe being the only part which could have served for respiration; the lower portion of the left lung had also been inflamed, and presented an example of the gray hepatization. All these portions of the lung rapidly sink in water. The mucous membrane of the stomach and small intestines was marked here and there with a few red patches; that of the great intestine was much injected and softened near the termination of the colon. The other organs were sound.

SMALL-POX—DOUBLE PNEUMONIA—ADMINISTRATION OF ANTIMONY—CURE.

Bernard, a boy four years of age, was received into the hospital on the 8th of July; two days previously he had been seized with headach and fever, accompanied with pains in the loins and loss of appetite, but without vomiting. On the night of the 28th the eruptions appeared; on the 29th we found the extremities and face covered by an abundant crop of papulæ; there was not much fever; the pulse 112, tongue red, covered in the centre with a white layer; no diarrhœa or cough; respiration sound; no vomiting.

30. The eruption is confluent on the face, moderately thick on the other parts of the body. No unfavourable symptoms have been manifested. Soup broth.

This favourable state continued up to

the 4th of August, when the fever became aggravated, and the patient coughed a little, but as the latter was slight, and the fever attributed to the suppuration of the pustules, the state of the chest was not examined.

5. The same symptoms persist.

6. The child coughs frequently, and there is great difficulty of breathing; he appears weak and oppressed. The progress of the variola is suspended, and the eruption has a faded appearance; the areola has disappeared round several of the pustules, which are marked with a dark spot in the centre. The state of the chest was now carefully examined, and we found the following stethoscopic phenomena:—There was matity on percussion behind and at the root of both lungs; at this point also there existed bronchophony, with souffle tubaire, and a few bullæ of the râle crepitant; at the left side of the chest the souffle tubaire was less distinctly marked than on the right, but the râle crepitant was more audible. The patient's tongue was covered with a thick gray crust; the breath was fetid; the abdomen tender on pressure, and two liquid stools had been evacuated during the night; pulse weak, 128; respiration 48.

Decoct. Mal.; *Gum-Emulsion, with* 24 *gr. of White Oxide of Antimony*; 1½ *Lavement.*

7. The fever is somewhat diminished to-day; but the cough continues as frequent, and the stethoscope furnishes the same sign; pulse 116; respiration oppressed and difficult, 48; there is no expectoration.

Cont. remed.; *Oxide of Ant.* 41 *gr.*

8. The fever is considerably abated to-day; the pulse has fallen to 96, and the respiration to 36. The bronchophony has disappeared, and the souffle tubaire has been replaced on the right side by a râle crepitant a grosses bulles. There is also less matity of sound upon percussion; the tongue is still dirty and moist; little thirst the diarrhœa continues slightly, the patient passing two liquid stools each day. The eruption has resumed its course; the skin became coloured in the neighbourhood of the pustules, and warm.

Oxide of Antim. ℈i.

9. Pulse regular, 104; respiration is free from embarrassment, 28; there is some slight tenderness of the abdomen, but no nausea or vomiting; two liquid stools.

Oxide of Antim. ℈i.

10. Percussion now gives a clear sound on the left side of the chest, and the râle crepitant has passed into the mucous râle; the sound still continues dull on the left side, where a souffle tubaire is heard in a circumscribed space; pulse 100; the diarrhœa has ceased.

Oxide of Antim. ℈j.

11. The symptoms continue the same; pulse 92; respiration 24.

12. The eruption completely desiccated; the pulmonic expansion is now quite healthy, and the inflammatory disposition of the lungs seems completely subdued.

It is unnecessary to pursue the history of this case any farther. The child was attacked on the 13th with inflammation of the conjunctivæ, which at this time prevailed epidemically in the hospital, but the inflammation was, fortunately, got under by the application of leeches to the temples, and the little patient was perfectly convalescent on the 24th. The case presents a well-marked example of the beneficial operation of antimony. From the youth of the child, and the state of weakness to which it was reduced, blood-letting was not advisable. Antimony was, therefore, administered in the dose of 24 grains on the 6th, and we see that the pulse was reduced on the following day from 128 to 116. On the second day the effects of the remedy were still more manifest. The pulse was brought down to 98, and the respiration reduced to 36, whereas it was 48 before that medicine was employed. The stethoscope indicated a commencement of resolution of the inflammation; the march of the eruption, which had been suppurated, was resumed, and the health of the patient rapidly restored.

SMALL-POX — PNEUMONIA — ADMINISTRATION OF ANTIMONY — CURE.—DOUBLE OPHTHALMIA—LOSS OF SIGHT.

Dussy, a boy, 13 years of age, generally enjoying good health, was received into the hospital on the 9th of September, 1833. He had not been vaccinated, nor had had the measles or whooping-cough. He had been ill for six days, and affected, three days previous to his entrance to the hospital, with headach, fever, and pains in the loins, but there was neither nausea nor vomiting.

10. The eruption appeared yesterday evening: the face is now flushed, and the skin very warm; the tongue white and clean; no diarrhœa or pain in the head or

abdomen. The eruption is confined to the face and upper extremities; pulse 104.

Oxymel; Emollient Lavement; Sinapisms to the feet.

11. The fever was much abated to-day; the skin not very warm, and pulse only 86. Had passed two stools during the day; the patient does not cough or complain of abdomen, but has some pain in the forehead. *Cont. remedia.*

12. Eruption going on well; pain of head gone; very little fever; pulse 87; no cough.

13. The fever is still moderate, without cough or salivation, although the mouth and roof of the palate are covered with a crop of white pustules; the face is flushed and swollen; eyes free from inflammation. Has passed two stools.

14. The pustules on the face are well filled and very numerous, many of them running into one another; but the secondary fever is mild; pulse 124; one stool. There is no pain of the head or abdomen, but the patient feels some uneasiness about the throat.

Lemonade; Collyria; Lavement-Emollient.

16. The symptoms continue nearly the same; the face is crusting partially, and much less swollen; but the hands are painfully tumefied; still some slight pain in the throat.

17. The face and extremities are much less swollen; pain of the throat has disappeared, and there is no trace of pustules to be seen on the inside of the mouth. The patient passed one stool during the night and slept well. To-day we noticed, for the first time, that the eyelids were a little swollen; the conjunctivæ red, and a small discharge of pus from the eyelid, with a little uneasiness about the eyes. *Contin. remedia*

18. All the pustules on the face are now covered with hard dry scales; the eyelids are still swollen a little, and the conjunctivæ injected, with a slight secretion of pus; the pain in the eyeballs has disappeared. The patient slept well during the night, and is free from fever; no pain in the head or abdomen.

Lemonade; Almond Emulsion; Collyria.

20. The fever is very moderate; the pustules on the extremities are not crusting, but shrinking, and assuming a purplish colour. The patient does not complain of the eyes, but the secretion of pus is augmented; the conjunctivæ continue red, and the eyes somewhat infiltrated. The patient is slightly affected with diarrhœa. On examining the eyes, we noticed a curious appearance of the left cornea; it was not duller in colour, but the upper moiety appeared thinner, as if one or two scales had been shaved off this part, and the line of demarcation was distinctly visible, running across the middle of the cornea.

Gum-Emulsion; Opiate Collyria; Four Leeches on each Temple.

21. There is some fever to day; the skin is hot, and the pulse 110; the tongue is clean but dry. The boy passed three stools during the twenty-four hours; the inflammation of the eyes continues, and both cornea are perforated, particularly the left, where we noticed the deficiency of substance yesterday; the child coughs a good deal; sleeps a little at night, and is free from delirium. *Cont. remedia.*

22. The scales have all separated from the face, and all the pustules on the trunk and extremities have dried without breaking; many of them are quite purple, and most are dark-coloured; the patient is somewhat feverish; the pulse full, 108; he has a short dry cough, and yesterday we distinguished the râle subcrepitant on the left side of the chest; no diarrhœa; the eyelids are much more swollen since yesterday, and discharge an increased quantity of pus; the cornea is dull and ulcerated on the right side; the upper half of the left cornea is gone, and the crystalline lens can be seen quite exposed.

Emulsion of Gum; Opiate Collyria; Lavement.

23. Nearly in same state; pulse frequent, 108; coughs a good deal, and has some difficulty of breathing; inspirations 36. On examining the chest, we hear the râle crepitant sec. in the inferior lobes on the left side. The eyelids furnish abundant suppuration.

Friction with Mercurial Ointment, round the Eyelids; Oxide of Antimony ℈i.

24. The fever is diminished to-day; pulse 104; cough nearly the same; no diarrhœa; the eyelids are less swollen, but the quantity of pus discharged is as great as before. *Cont. remedia.*

15. Coughed a great deal during the night; pulse 104. On examining the chest, we hear on the left side a souffle tubaire and bronchophony; on the right side a râle subcrepitant; the chest also returns a dull sound upon percussion at the left side.

Gum-Emulsion; Collyria; Oxid. Ant. ℈i.

26. The fever has completely subsided to-day; the patient has no uneasiness in the abdomen or head; no nausea or diarrhœa, but he coughs still a good deal; the tongue is brown and dry; the discharge of

pus from the eyes diminished. *Continue Frictions and Antimony.*

28. Eyes continue in the same condition; the child coughs a good deal, but is free from fever; pulse 80; no derangement of digestive organs; he passed one stool during the morning. *Same remedies.*

30. The cough is much diminished; the skin is a little warm to-day, and the pulse full, 92; the pectoral phenomena have continued for the last few days; we still hear the souffle tubaire and bronchophony on the left side, but in some points the former is replaced by a râle crepitant; no diarrhœa or nausea. *Contin. rem.*

1. Skin still a little warm; the pulse is irregular, 90; the cough continues the same, but the souffle has disappeared; no stool.

Opiate Collyria; Gum-Emulsion; Ox. Ant. ℥ss.

3. All fever is gone; the skin cool; pulse tranquil, 98; coughs still; the râle crepitant has also disappeared, but the respiratory sound remains dull on the left side; no stool.

Cont. rem. Ox. Antim. 60 gr.

4. State of patient nearly the same as yesterday; pulse 100. To-day we hear some râle crepitant on the right side above the root of the lung; the cough is diminished; tongue quite clear; no stool; no nausea or sweating.

5. The chest is quite free from any abnormal sound; the skin is cool; pulse 85; no stool.

Contin. remedia. Ox. Ant. ℥i.

6. The cough is nearly gone, and the râle crepitant, which continued so long, has disappeared; pulse calm, 98; tongue quite clean. no stool.

8. The patient has now ceased to cough, and in a few days was perfectly convalescent.

The effects of antimony were sufficiently manifest in this case, although not produced so rapidly as in that of the boy Bernard. The first symptoms of pneumonia appeared on the 21st, and the white oxide was not administered until the 23rd. Within twenty-four hours the febrile symptoms were diminished; but the cough and stethoscopic phenomena persisted for several days. The rapid manner in which vision, in this case, was destroyed by an apparently slight inflammation, is also worthy of attention. We have several examples of this kind, particularly when ophthalmia prevails, as it often does, epidemically, in the hospital. In many cases the inflammation is severe, and the upper eyelids are extensively infiltrated; but in others the cornea ulcerates under very slight irritation, which does not appear to be mitigated in any degree by active antiphlogistic measures.

SMALL POX—PNEUMONIA—DEATH.

Hail, a boy, fifteen years of age, was received into the "Acute Ward" on the 3rd of October, 1833. He has already had the small-pox, some traces of which may be seen in the face; four days ago he was seized with nausea and vomiting, violent pain of the head, abdomen, and loins, accompanied with febrile symptoms and occasional fits of shivering; these symptoms persisted without any intermission to the day of his entrance into the hospital; the bowels have been constipated for the last six days.

4. The fever is considerable to-day; the skin very warm; pulse moderately full, 100; he complains of uneasiness in the head and belly, and of violent pain in the loins; pressure over the epigastric region occasions pain; the tongue is moist and white; the eruption appeared last night; and now the face, which is flushed, is marked by a few red points; the patient passed an agitated night, and is tormented by constant thirst.

5. Was delirious during the night; the pain of the epigastric region continues unabated, and there is the same pain about the loins; no vomiting; the tongue is white and dry; the skin not very warm; pulse 96.

Lavement-Emollient; Warm Poultice to the Abdomen; Sinapisms to the Feet.

6. The pain of the loins and head has disappeared, but the epigastric region still continues tender; he has passed two stools; the face is now considerably swollen; there is much thirst; the skin moderately warm; pulse full, 90.

Sinapisms to the Legs; Sirup of Gum.

7. Head and abdomen are free from pain; patient complains of uneasiness about the throat; the tongue is white, moist, and covered with pustules; the face is extremely swollen and flushed, although the pustules are not filling well; the pustules on the upper extremities are better filled, and surrounded with a very red areola. On the lower extremities they are quite flat, and the skin is pale; the fever is moderate; pulse 90; has passed one stool. *Contin. remedia.*

9. The face remains red, and much swollen. On the arms the pustules are

united by an erythematous redness; the head and abdomen continue unaffected, and the pain of the fauces is nearly gone; skin very warm; pulse tranquil, 94; the pustules on the lower extremities still remain flat; child does not cough; he passed a disturbed night.

11. Face continues in the same state; the child complains of his mouth, and on examining we find the tongue, which is white and moist, covered with numerous pustules; excessive thirst, and high fever; no cough or diarrhœa; the patient passed a sleepless night.

Gum-Emulsion; Gargles.

12. The swelling and redness of the face are diminished; the tongue moist and very foul; passed one stool; the child was delirious during the night; skin moderately warm; pulse quick and feeble, 132. *Cont. remedia.*

13 and 14. The patient continues nearly in the same state as formerly; pulse always quick; the voice is altered and hoarse. On the 14th he passed three liquid stools.

15. The neighbourhood of the lips and nose is now covered with thick dry crusts; the patient complains of pain in the arms and throat; tongue moist and white; no pain of head or abdomen; three liquid stools; was delirious during the night; the skin is warm and the pulse quick, 120; the eyes and eyelids are unaffected; no cough.

Lavement; Decoct. of Bark ℥vi; *a Blister to each Leg.*

16 and 17. The child still complains of his throat, and is hoarse; he passed a tranquil night; no pain in the head or abdomen; does not cough; one liquid stool; he now takes a little broth with pleasure.

Decoction of Bark ℥viii, *with Sirup of Poppy* ℥ij.

18. The face is completely marked by thick crusts; the skin is very warm; pulse 128; the tongue dry and rough; there is a little diarrhœa; the patient was delirious during the whole night; some of the pustules on the extremities have scabbed off; others have shrunk without filling, and the rest still contain pus; the pain of the throat seems to have disappeared, at least the child no longer complains of it.

Continue Decoct. and Sirup of Bark; Gargle of Honey and Barley Water.

20. Face in same condition; the tongue is brown and very dry; the nose is filled with a thick mucous secretion, producing some embarrassment of the respiration; the skin is dry and very warm; pulse small, 130; excessive thirst; the patient has passed four stools; he has been delirious throughout the night, and is still so agitated as to require to be tied in bed. *Cont. remed.*

21. Some delirium during the night; the child now lies in a state of somnolence, and the muscles of the face are slightly convulsed; the skin is not very hot; the respiration commences to get embarrassed; three liquid stools.

22. The child lies in a stupid state, delirious, and muttering. During the day the extremities became convulsed, and he died at three o'clock in the afternoon.

Autopsy.

Organs of Respiration.—The lungs were gorged with dark blood, but warm, crepitating, and float in water. On the posterior surface of the epiglottis and larynx there were several small round ulcerations, lined with a yellow tenaceous matter. The lining membrane of those parts was thickened, and covered by patches of a reddish-white false membrane. The inner surface of the trachea appeared excessively red and injected, but we could not find any trace of ulceration of false membrane deposited; the lining membrane of bronchi was quite healthy; on the left side the edge of the chorda vocalis was completely destroyed by ulceration.

Abdomen.—The small intestines healthy; there is much venous congestion near the termination of the ileum; the mucous membrane is unaltered; large intestines also healthy, marked here and there with a few patches of diffused congestion; the stomach was of a dark-gray colour, with some patches of congestion, but the lining membrane sound; brain of good consistency, a little injected, yet healthy.

ST. GEORGE'S HOSPITAL.

FRACTURE OF THE NECK OF THE FEMUR.

James Dunnett, ætat. 57, applied for admission on Wednesday, March 5th, complaining of pain in the region of the right hip and groin, and inability to move the right lower extremity. He was admitted and put to bed, and on the following day gave us the following statement:—Six weeks ago, in descending a flight of steps, he tripped and fell, and in endeavouring to prevent his head from receiving injury he swung round, by doing which he struck his hip against the banisters. He now

found that he could not rise, and had severe pain in front of the groin of the same side. He was confined to his bed for some days and the pain subsided, but the inability to move remained nearly as great as ever. On examination, it was discovered by accurate measurement that the right extremity was three-quarters of an inch shorter than the other, and, on placing one hand on the anterior and the other on the posterior surface of the hip-joint, and rotating the leg, a feeling of crepitus was distinctly experienced in the situation of the neck of the joint. These symptoms combined with the above history of the case, led Mr. BRODIE to the conclusion that the case was most probably one of fracture of the neck of the femur. He remarked, "I find, gentlemen, that when the foot is rotated there is a degree of crepitus felt, and that the great trochanter moves in the arc of a smaller circle than natural. In such a case as this, therefore, the radius of that circle is from the point of fracture to the great trochanter. In the natural state, the radius extends from the extreme point of the head of the bone to the external extremity of the great trochanter. I do not know precisely at what part of the neck of the bone the fracture may be situated. It may be internal to the capsule, in which case we cannot (according to the experience I have had) look for any union of the fractured ends of the bone. It may be situated quite external to and on the outside of the capsule, in which case it is just possible that union may take place; or it may be situated partly internal and partly external to the capsular ligament, in which case it is difficult to give a decided prognosis of what the result may be. The man can scarcely walk, but limps. With respect to the shortening of the limb, that may sometimes happen immediately after the accident, if the fracture be situated external to the capsular ligament, as the muscles then draw the bone upwards. If, however, the fracture is somewhat covered by the capsular ligament, that forms a sort of splint or support to the joint, and prevents the shortening until some three weeks after the accident. At Worcester last summer, I saw a physician who had received a severe injury of the hip-joint some months previously. He had been examined very carefully by the surgeons of Worcester, who are very clever men, and they had not been able to detect what the nature of the injury was, but upon examination I found that the lower extremity was shortened to the extent of some inches, and I plainly recognised all the symptoms of fracture of the neck of the femur. It sometimes thus happens that fracture of the neck of this bone is not recognised, or else is entirely overlooked in the first instance."

RHEUMATISM. — SYNOVIAL INFLAMMATION OF JOINTS — COLCHICUM IN VARIOUS DISEASES.

In the course of his rounds lately, Mr. BRODIE came to a man's bedside who had been admitted some weeks before with ulcers of the legs, which were now rapidly healing. He had also contraction of the second and third toes of the right foot, for which Mr. BRODIE tried his plan of strapping and plastering, formerly noticed by us, but without success, the contraction having lasted for too long a period. On the present occasion he presented his wrist to the surgeon for inspection. It was red, tumefied, and painful, and, for its relief, the house-surgeon had given him the *Vin. Rad. Colchic.* with *Carbonate of Magnesia*, but without much benefit. Mr. BRODIE, however, ordered it to be continued. He remarked, that in this case there probably was bursal inflammation of the joint. With respect to acute rheumatism, he believed that, frequently, in spite of all remedies, the disease would run a certain course. Colchicum was, generally speaking, a very excellent remedy—its efficacy not depending on its purgative powers. It was as well, perhaps, if it did purge, because then the full effect of the medicine was said to be produced. However, it was generally advisable to purge in rheumatism, and, therefore, purgatives might be advantageously combined with the colchicum to ensure that effect. There were some cases in which calomel and opium were of great service,—those cases especially in which the disease would go from the knee to the pleura and back again. On such occasions the medicine acted like a charm. "Colchicum," continued Mr. BRODIE, "is frequently given in private practice, for affections which you never meet with among the in-patients of an hospital, and are rarely met with among out-patients. I allude to those cases (especially among men) in which rich and luxurious diet is indulged in, and where very high-coloured yellow urine is present, containing a large proportion of the lithate of ammonia, in the form of red and turbid sand. The urine is passed with extreme pain; and in such cases I give the *Acetous Extract of Colchicum* with the greatest advantage. I find it more useful than alkalies in such cases. The latter only ameliorate the symptoms of the disease, whereas the colchicum removes and cures it entirely."

At the next visit the rheumatism of the

wrist was found to have much subsided; the redness and the swelling were subdued; and the man had, in a great measure, recovered the use of his hand. He had been taking the following remedies for five days since the first period of the attack.

℞ *Vini Radicis Colchici* ℥ij xx;
Magnesiæ Carbonatis ℈i;
Aquæ Menthæ Piperitæ ʒiss. Misce.
Fiat haustus, ter in die sumendus; and to this had been added a quarter of a grain of morphine to relieve the pain and procure rest.

Mr. Brodie said, he supposed that any attack of rheumatism, except in a case of unusual and extreme severity, would subside after five days duration. He believed that where synovial membranes were affected with rheumatism, colchicum was of service, but where the fibrous textures of a joint were involved in the disease, calomel and opium were the best remedies. Dr. Seymour, in the treatment of the disease, generally, we believe, commences with venesection, and calomel and opium, and where the latter remedies fail, he gives the *Decoct. Guaiaci* with great success.

At the next visit, the man was found to have experienced much relief; the pain, swelling, and redness, had subsided, and the "sound chirurgical" treatment gave way to the "pure medical," Dr. Seymour's *Decoct. Guaiaci* being ordered in place of the last prescription. A few days after taking it, the man had so much benefited from the remedy that he had scarcely a trace of disease left in the wrist. He was still, however, the subject of ulcers of the legs, and of crooked toes.

ST. GEORGE'S HOSPITAL.

LETTER FROM A PUPIL.

To the Editor of The Lancet.

Sir,—I have abstained longer than I ought from noticing to you, as the student's friend, the various glaring abuses and defects which exist in the department of "medical and surgical instruction" at St. George's Hospital. In the notice of this institution which appeared in the Student's Number of The Lancet in October last, the advantages and disadvantages of an attendance here were described. Although the disadvantages were very numerous, I was induced by circumstances to enter here, and since that time have had ample opportunities of verifying the statements then made. The surgeons and physicians are grossly irregular in their attendance, and when they do arrive, it is frequently at so late an hour, that most of the students have been obliged to leave for the purpose of hearing the anatomical lecture, thus losing the appointed opportunities of becoming acquainted with the hospital practice. It must be matter of gratification to the humane, to know that operations of note or importance are very rarely required or performed here. But even when the adverse fate of some unfortunate person does cause a case of "accident" to be brought to the hospital, it almost invariably happens that the surgeon whose accident week it may be, is absent from his house, and that the necessary operation is, in consequence, performed by the assistant-surgeon Mr. Walker. The operations for strangulated hernia are commonly performed by this gentleman,—almost all of them, I am glad to say, successfully. If any one else performs them it is by chance, as, for example:—A few weeks since a female patient with femoral hernia was admitted during Mr. Brodie's accident-week. That gentleman was, as usual, from home when sent for, and the attendance of Mr. Walker was, therefore, demanded. It chanced that Mr. Cæsar Hawkins was lecturing in the theatre at the time, and the opportunity was seized by him to exercise his hand on the patient. He abruptly closed his lecture with "Gentlemen, there is a case of hernia up-stairs, which I am now going to operate upon," and immediately went to the operating theatre, and performed before Mr. Walker (whose patient it had become) could arrive. This was regarded in the hospital as a *ruse de guerre*, affording a good occasion, not for increasingly benefiting the patient, but of keeping an operation out of the hands of Mr. Walker—an event which had much better be effected by a prompt attendance of the surgeons on proper occasions. On another occasion, a patient, with hernia, was admitted under Mr. Keate, who was absent from home, and whose substitute Mr. Walker was obliged to become. Mr. Keate arrived after the operation was nearly finished, and took off his hat and coat to proceed to business, when the house-surgeon informed him that Mr. Walker had performed the operation. "The Devil he has!" ejaculated Mr. Keate, resumed his hat and coat, and walked off without saying another word. Such is a sample of the spirit that reigns here. Such delightful feelings amongst the medical officers are constantly presented to the notice of the pupils, who are thus taught how to cultivate the species of

"high moral feeling," both towards co-adjutors and patients, which distinguishes metropolitan hospital pures.

A matter which has lately made some stir amongst the pupils, is the following. At the west end of Piccadilly is a mahogany-veneered shop, kept by a large apothecary of the name of Fuller. Mister Fuller is a great man at St. George's. He is one of the "top apothecaries," whose acquaintance Sir Henry Halford says should be carefully cultivated. He is, I believe, one of the "visiting apothecaries" of the hospital, and in that capacity does as little mischief as he can. A few weeks since, while this important gentleman was passing the surgeons' pupils' room, a glove was thrown out, probably by one of the sportsmen above, and alighted upon or in the way of Mr. Fuller, whose back was so elevated by the accident, that he thought the bump should be exhibited in the board-room. The pupils regarded this as a fine joke. Mr. Fuller, however, forthwith marched before the Board of governors, and formally flared-up on the subject. Alas for the pupils! Messrs. Hicks and Patten, the house-surgeons, were immediately summoned from their duties to attend the gentlemen of the Board, when orders were forthwith issued to them, that they should narrowly watch and remark upon the conduct of any and every pupil guilty of the slightest breach of propriety as an embryo "pure," and report all acts of misconduct to the Board, who would then expel the culprit, neck and heels, from the hospital. I understand the house-surgeons remonstrated strongly against this mandate, but without effect, and "a notice" to the pupils in accordance with the order was accordingly posted up in the pupil's room on the following day.

It was, as may be guessed, rightly or not, immediately torn down. Thus, however, in addition to their other duties, the house-surgeons are now appointed spies on the pupils, all of whom say, though, that they are sure the house-surgeons are gentlemen of too much honour to act up to orders, and that expulsion is not to be effected at the instigation of any such man as Mr. Fuller.

Another instance of the misfortune of a pupillage at this hospital, occurred a short time since, on the occasion of Mr. Brodie's dressership becoming vacant. It is a rule that the vacant dresserships should be filled up by pupils according to the rotation of names in the hospital-book, there inscribed at the time of entering. This duty devolves on the junior surgeon, Mr. Babington, who *forgot* to enter the name of one of the gentlemen, Mr. Cole, who has thereby lost the advantages of the office. Mr. Cole remonstrated with Mr. Babington on several occasions, but to no purpose, and Mr. Brodie's interference was sought, when Mr. B. took the candidates, Messrs. Barrett and Cole, aside, and, after a little cajolement on the subject, gave the situation to the former gentleman, who had certainly less right to it than Mr. Cole. Mr. Cole, however, was promised it on the next vacancy, and Mr. Macauley, whose turn it will then be, has been consoled with the promise of being raised to the situation of clinical clerk to Mr. Brodie.

These situations are anxiously sought for, because the same situations under the other surgeons are considered worthless. Mr. Keate's powers lie principally in the art of rating the patients severely, and scolding the nurses; Mr. Hawkins never gets, in his instructive moods, beyond the communication of a little knowledge on the art of performing lithotomy, which lithotrity is fast driving from the field of surgery; and Mr. Babington is a mute on all subjects.

I have something to say with regard to the physicians, and that "highly-moral no-man-no-woman" Dr. Roderick Macleod, but for the present must close, and am, Sir, your obedient servant,

A St. George's Pupil.

St. George's Hospital, April 7th, 1831.

NOTE FROM MR. SALMON.

To the Editor of The Lancet.—Sir, In your account of the proceedings of the *Westminster Medical Society* on the 29th ultimo, inserted in your Journal of this day, I am reported to have expressed my surprise "at the manner in which the President had evaded the charge brought against him of having libelled the society in anonymous articles in a medical periodical." Now I beg to state that I never made the observations here assigned to me; neither am I conscious of any such charge having been brought against the President. I animadverted upon the extreme impropriety of the report which appeared in the *Medical Gazette*, likewise expressed my astonishment at the inconsistency of the chairman, in requiring from a particular member the retraction of certain observations, before he (the chairman) would consent to add his signature to the reform petition, but nothing further. My latter remarks, which your reporter states he did not distinctly hear, have evidently been misunderstood. Requesting your in-

sertion of this explanatory note in your next number, I remain, Sir, yours very obediently,

FRED. SALMON.

12, Old Broad-street, April 5th, 1834.

*** The note of Mr. Salmon has been shown to the gentleman who reported the proceedings, and he has supplied us with the subjoined remarks. "According to inquiry which I have since made of a gentleman who was within hearing, the following were nearly the words used by Mr. Salmon:—'He was greatly surprised that the President instead of directing his remarks to the subject of the libel on the Society, should have swerved from it to a defence of his own conduct in connexion with the debates on the reform resolution.' I was not present at the meeting of Saturday, April 5, but have heard, and may take this opportunity of saying, that on that occasion, when the 'minutes' of the preceding evening were read, it was discovered that the Secretary had conveniently omitted all mention of that portion of the debate which occupied three-fourths of the time of the Society! The Society appropriately expressed their opinion of this omission of the agent of the party so conveniently served."

BARON DUPUYTREN once more officiates at the *Hotel Dieu*. He resumed his visits and lectures at the Hospital on the 1st instant, having returned to Paris from Italy on the Wednesday previous, perfectly recovered from the attack which so seriously threatened him some months since. A deputation of compliment has waited on him from the Academie de Médecine.

CORRESPONDENTS.

Several of the more benevolent of the Governors belonging to *St. Thomas's*, *Guy's*, and the *Middlesex* Hospitals, have been engaged during the past week in making inquiries concerning some of the fatal operations which have recently been performed in those institutions. The *St George's* stone case, also, has, very properly, come in for its share of attention. The Governors cannot be better employed than in prosecuting inquiries of this description. Generally speaking they know little or nothing of what is passing within the walls of their institutions. In addition to the dreadful tortures to which the patients are sometimes subjected by the hand of unskilfulness, it is greatly to be lamented that the attentive, scientific, and humane portion of the officers of our hospitals, should be made to participate in the censures which are so universally bestowed on their guilty colleagues. As the press furnishes the public with the only means of discrimination in such cases, it necessarily becomes, as regards patients, operators, and mutilators, an instrument of protection and justice.

If the FACULTY OF MEDICINE were instituted, Mr. A. Green, of No. 11, Nottingham Terrace, New Road, "just removed from his late "residence in the neighbourhood of the Middlesex "Hospital, to his present one since his marriage," would cease to act as his own amanuensis in puffing himself, or would speedily cease to belong to the profession.

If Mr. Jacob Ayton, of Southampton, will send a small quantity of his preparation to the office of THE LANCET, the "antidote" shall be tried, and if it be found to succeed in counteracting the poisonous effects of arsenic, it shall receive a suitable notice and commendation.

A Five Years' Subscriber.—Undamaged numbers are exchanged at the office if not more than a year old. From the continued indisposition of the gentleman mentioned, the publication of the matter referred to has been delayed.

A Georgian.—We are fully aware that Mr. CÆSAR HAWKINS *can* reply in the negative to some of our interrogatories, but why, we ask, has he not yet published *his own* report of the case, as it was rendered a deeply interesting one by the fact that the patient lost his life, either from the operator's want of skill, or from an accident which a small share of forethought might have prevented?

In the case related by *Mr.* ——, City Road, there are no circumstances sufficiently remarkable to demand its publication. Such cases are by no means uncommon. The treatment was judicious.

Mr. J. Crisp.—It would be premature to refer specifically to what possibly will be, or what, in reality, ought to be, the provisions of a new Act of Parliament for the government of the practice of medicine, but it is quite clear that no new law will be enacted without its making distinct reference to the qualifications of medical practitioners and the annihilation of quacks. As to the regulation of chemists and druggists, and the interdiction of the sale of quack medicines, it is impossible even to conjecture what will be done by the legislature.

Mr. J. Dixon.—Our space will not admit of the adoption of such an arrangement. It is a question, however, only of time.

A. B.—The member of the College, under the circumstances stated, would be liable to the penalties of the Act.

H. B. H.—It is expected that the University Hospital will be opened for the reception of patients by the 1st of October.

A. B.—The paper will be found in No. 321, Vol. 1, 1829, 30, at page 143.

An Old Subscriber.—Another letter on the same subject was received by us, and put into type, before the letter from Birmingham reached us.

M. Moscati should answer the "calumnies" in the periodical which contained them. We cannot open our pages to refutations of statements made in other journals.